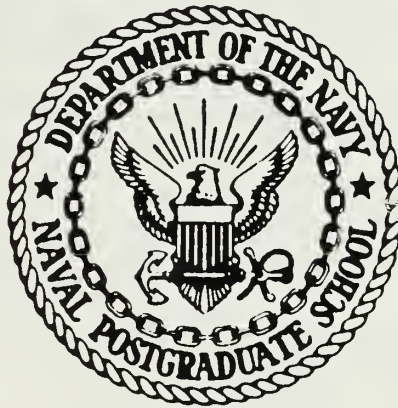


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THESIS

INFLUENCES ON DEFENSE PROCUREMENT
EXPENDITURES IN CALIFORNIA DURING
THE REAGAN PRESIDENCY

by

Nerissa Williams

June 1987

Thesis Advisor:

J.L. McCaffery

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Influences on Defense Procurement Expenditures
in California During the Reagan Presidency

by

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Lieutenant, United States Navy
B.A., University of California, San Diego, 1979

Submitted in partial fulfillment of the
requirements for the degree of

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from the

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June 1987

ABSTRACT

The purpose of this thesis is to examine the trends in defense procurement during the Reagan presidency, with the emphasis on California. In addition, those factors which make up the general area of study termed the politics of defense procurement will be examined to determine what role they played in the award of defense dollars in California.

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I. THE INTENT

A. INTRODUCTION

Folklore says that California has benefited more than any other state from the Reagan Administration's military buildup:

California has received a huge share of the increased military spending during the Ronald Reagan presidency, a trend enhanced by the fact that Reagan and his defense secretary, Casper Weinberger, are Californians. [Ref. 1]

More than any other state, California has benefited most from the Reagan military buildup. [Ref. 2]

Statements such as these reflect the generally held notion that California has been the primary beneficiary of the increased defense spending that has resulted from the Reagan Administration's military buildup. This notion, for the most part, carries with it the presumption that the reason California has benefited to such a large degree from the military buildup is because Ronald Reagan is a Californian.

The purpose of this thesis is to examine the trends in defense procurement during the Reagan presidency, with the emphasis on California. In addition, those factors which make up the general area of study termed defense politics will be examined to determine what role they played in the award of defense dollars to California.

B. RESEARCH QUESTIONS AND METHODOLOGY

In order to begin this study, it is useful to have a framework of questions from which to, first, build the structure of the research and, secondly, provide some direction for conclusions about the research. Therefore, the following research questions were constructed:

- Has there been a significant increase in defense contracts awarded to California's military contractors since the Reagan Administration initiated its defense buildup?
- If so, is this increase a function of various elements of defense politics or the fact that California's huge infrastructure of military contractors simply dwarfs that of other states?
- Given the various roles that elements of defense politics play in defense procurement, which ones have significantly accounted for increases in the award of contracts in California?
- How does California view this award of a large percentage of the total defense contracts in the overall picture of the state's economy?

In order to answer these questions, Chapter II of this thesis will provide an historical background concerning the role that various elements of defense politics have been thought to play in defense procurement in the United States since 1961. This background will consist of a composite picture of defense politics in its various forms as it has been studied and reported in the literature on the subject. Chapter III of this thesis will examine the particular defense political influences that have predominated in the award of prime defense procurement contracts in California during the Reagan presidency.

An analytical study will follow in Chapter IV. In this chapter the intent will be to provide a quantitative analysis of trends in the procurement process during the years 1980 to 1986. Specifically, the following analysis of data will be made:

- Annual dollar and percentage of total U.S. prime contract awards for the five states receiving the largest contract dollar awards
- Percentage change in contract awards, year-to-year, for these top five states and other identified states with the greatest percentage change
- The leading five states and their percentage contribution in each of 25 major procurement programs annually
- The top dollar awards to contractors by year.

Chapter V will be a review of how the state of California perceives the large number of defense dollars that flow through the state in the context of its economy; this review is specific to the year 1986. And, finally, Chapter VI will provide a summary and conclusions.

C. EXPLANATION FOR RESTRICTED SCOPE

The original intent of this thesis was not to be a case study of California during the Reagan presidency. The original idea was to examine the politics of military procurement from about 1972 through 1986 for the nation as a whole. The research question would be something to the effect of, is military procurement a product of comparative economic advantage or "pork barrel?" "Pork barrel" politicking is the use of political power to award economic

gains to groups--states, companies, individuals--when they have no technical advantage over other groups, and their only criterion for getting the benefit is that they can amass significant voting power. This is called "pork barrel" politics. This is usually done by congressmen who want to keep their home district happy so they will be re-elected. Usually "pork barrel" politics involves a member coalition so that a voting majority is formed when one group gets one thing and another group something else, and their combined weight is enough to pass the bill. Or it may be attached as an amendment to a crucial bill in return for the group's support on the main bill. The essence of the definition of "pork barrel" politics is that it is undeserved in terms of technical merit. A majority of the literature on military procurement credits "pork barrel," the "military-industrial complex," or the "congressional-industrial complex," with greatly influencing the distribution of defense dollars; however, there is also a body of research which questions the overall contribution of these defense political influences. To answer the basic research question against the backdrop of the controversial literature on the subject, it would have been necessary to gather some factual data and analyze it. The data that were thought to be crucial to the study are state by state defense spending and an idea of the size of each state's industrial base and the percentage of this base dedicated to

defense contract work. The state by state defense spending information was readily available. The other half of the data, specifically, defining the percentage of state industrial bases accounted for by defense activity, proved to be next to impossible to gather. It was the difficulties in this endeavor that lead to the case study approach to this thesis.

The first difficulty in attempting to gather information on the size of each state's industrial base, potential industrial base and percentage of the base involved in defense contract work, is just getting a handle on the exact form the data might take. A fairly good surrogate for this data was assumed to be the percentage of a state's economy which is accounted for by defense activity. (The premise being that the larger the percentage of a state's economy accounted for by defense activity, the greater the probability that defense political influences would be in evidence to ensure the continued flow of defense dollars.) It would seem an easy task to find state GNP percentage figures concerning the above; however, it proved otherwise.

The search for this information began in the Naval Postgraduate School library. After some extensive searching and endless querying of the research librarians, the location of such information did not become obvious. Therefore, the search took the form of backing into the information from questioning experts in the field. The

first step was a conversation with a columnist from the Sacramento Bee, Dan Walters. He had written a column on the huge share of military spending that California had received during the Reagan presidency. In the column, he stated that California's most important industry is military defense [Ref. 1]. When asked whether or not he knew of a source for the kind of data needed to answer the research question, tailored at this point to California, he said there was a real "vacuum" of information when it came to following military spending in California. However, he was able to provide the necessary key to finding the right department in the California Legislature for the kind of information needed. The Commission on State Finance produced a report in August of 1986 called The Impact of Federal Expenditures on California. The Commission was required by Assembly Bill 623 (Chapter 1027/85) to: (a) develop and maintain an economic model capable of estimating the impact of certain federal expenditures on California's economy; (b) project federal expenditures coming into California, and (c) estimate the impact of these expenditures on the state's economy and on General Fund revenues [Ref. 3:p. 1]. In the middle of this report is a table which is entitled "California Output Related to Defense Spending"--exactly the kind of data needed. The report acknowledged Data Resources, Inc. (DRI), a Lexington, Massachusetts, consulting firm that tracks defense spending, for the data

used in conjunction with the Commission's econometric model to produce the output estimates. Logically, the next step was to contact DRI; if they had the data for California, why not for the rest of the U.S.?

After getting the assistance of several very capable people at the various offices of DRI, it became evident that the data used in the California report was gathered in response to a special request from the state. A discussion with the person responsible for assisting the Commission of State finance in the San Francisco office revealed that California was the first state mandated to compile such information, and it was not available for other states as of yet.

At that point, discussions with some of the faculty at the Naval Postgraduate school led the search to the Statistical Abstract of the United States. In this source, a table presents defense purchases as a percentage of GNP. The table's source is the U.S. Bureau of Economic Analysis, The National Income and Product Accounts of the United States 1929-1976 and Survey of Current Business. Consequently, the U.S. Bureau of Economic Analysis was contacted. The idea was that defense purchases as a percentage of total GNP had to be compiled from state information. Unfortunately, that was not the case and another dead end was reached.

Numerous other attempts were made to find the data on a nationwide basis similar to that available for California. The general response was, "It seems like that kind of information should be readily available." Given the time limitations for the completion of this thesis, no further resources were expended to complete an unequivocally exhaustive search for the data to allow it to be said that it does not exist; but a reasonably comprehensive and methodical search was conducted to support the conclusion that such data are too hard to find. Thus, this study focuses on California and the exploration of the following questions:

- Has there been a significant increase in the award of DOD prime contract awards in California since the initiation of the Reagan Administration's buildup?
- If so, is this increase a function of various elements of defense politics or the fact that California's huge infrastructure of military contractors simply dwarfs that of other states?
- Which of the various elements of defense politics play key roles in the award of prime contracts in California?
- And, finally, how does California view the impact of these defense expenditures on the economy?

The next chapter of this thesis will provide a chronological review of some of the significant academic research articles and political commentaries written on defense politics from the late 1950s to the present.

II. HISTORICAL BACKDROP

A. INTRODUCTION

This chapter presents a chronological review of the significant scholarly research and political commentary publications on defense politics from the 1950s to the present. The publications in the 1960s were basically written as an acknowledgement of the existence of defense political influence, primarily in the form of the "military-industrial complex." In the 1970s, there was a proliferation of articles, both commentaries and empirical research studies, on elements of defense politics. And, in the 1980s, the emphasis in the periodical literature has been an examination of the element of defense politics with the newly coined name, "congressional-industrial complex."

B. THE BEGINNING

There were rumblings in the late 1950s and early 1960s that would lead to the recognition of the "military-industrial complex" as a vital element of defense politics.

- According to Edwin Lahey, well-known Washington Correspondent, "the Air Force . . . has a lobby stronger than pig iron. The jaunty generals from the wild blue yonder have more Senators and Congressmen in their pockets than the Anti-Saloon League ever had at the peak of its power." The reason is clear. Appropriations granted the Air Force necessarily benefit the aircraft industry; it is, in effect, the industry's lobby.

It is the existence of this lobby, the most powerful but least advertised in Washington, that raises a question more serious than whether the industry's profits are excessive. For it may be that we are spending more for this type of defense than a realistic, disinterested appraisal of the risks would indicate. [Ref. 4:p. 603]

- It is by no means surprising but nevertheless worth noting that the Senators who are the strongest advocates of increased appropriations for military aircraft represent states with burgeoning aircraft industries. [Ref. 4:p. 604]
- Since the end of World War II many in the elite circles have felt that economic prosperity in the U.S. is immediately underpinned by the war economy and that desperate economic--and so political--problems might well arise should there be disarmament and genuine peace. . . . Leading corporations profit from the preparation of war. In so far as the corporate elite are aware of their profit interests--and that is their responsible business--they press for a continuation of their sources of profit, which often means a continuation of the preparation for war. [Ref. 5:p. 197]

Despite editorials such as these, the "military-industrial complex" as a phrasal idiom and probably the most predominant element of defense politics did not draw a good deal of interest from other editorialists, journalists, scholars and analysts until after President Eisenhower coined the phrase in his farewell address in 1961. In his speech, President Eisenhower spoke of the necessity of the standing military establishment after World War II, but he went on to warn against its potential power:

In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist. [Ref. 6:p. 797]

Shortly after the President's address, Fred J. Cook wrote an article for Nation entitled, "Juggernaut: The Warfare State" [Ref. 7], which became the basis for his manuscript, The Warfare State [Ref. 8]. Cook's work is repeatedly cited in the literature on the subject of the "military-industrial complex." One of the primary reasons for this could be attributed to the fact that he believed that the above warnings of President Eisenhower had come to fruition. Cook did not mince words in his description of the situation; as he, himself, explained about the article:

The central theme was simply this: that the military industrial complex had become so all-powerful that the prosperity of the nation had become dependent on it, and that the interests so intertwined had developed the power to determine national policy and affect the nation's destiny without regard to the will of the people. [Ref. 4:p. 602]

After Cook's article was published there seemed to be a good deal of emphasis in the periodical and scholarly literature of the time that focused on the "military-industrial complex" in one way or another. The following section cites some of those publications.

C. THE 1960S

In the 1960s the study of defense politics seemed to center more on the geographic "where" of military defense spending than on the "why" focus that Cook suggested. In fact, D.S. Greenberg cited the distribution of defense dollars as one argument against Cook's theory that the

nation's economic welfare was undeniably linked to the prospect of war. He said:

If we accept Cook's contention that defense spending is so entrenched in American economic life, how do we account for the fact that between the Korean War and July 1960, Michigan's share of military prime contracts dropped from 9.5 to 2.7 percent. Illinois, Ohio, Indiana, and Wisconsin together had a total of 21.9 percent, which had dropped to 9.1 percent. The nationwide total for defense spending went up, of course, but these areas, which are fully able to raise their voices in American politics, have suffered the effects of what, from their standpoint, might just have been a disarmament agreement. [Ref. 6:p. 798]

The impact of military procurement on the nation's businesses, both in geographic and product mix terms, was the focus of an interview with the Assistant Secretary of Defense, Comptroller, Charles J. Hitch, in September of 1962 [Ref. 9]. While Mr. Hitch predicted a trend in defense procurement toward more research and development and fewer production runs, he was certain that various defense industries and geographic areas would continue to feel the impact of defense production decisions on different weapons systems:

I expect, however, that defense business will continue to change rapidly in the character and mix of its products and therefore, will continue to have an impact on particular industries and on particular localities and geographical areas. [Ref. 9:p. 30]

Judging from the answers to particular interview questions, it would appear Mr. Hitch did not lend much credence to the power of the "military-industrial complex." He attributed the specific product mix of military defense items to technological advance, changes in the international

situation and changes in the nation's strategic plans [Ref. 9:p. 30] He explained the concentration of research and development contract awards in California and the Eastern seaboard as "natural":

I wish the concentration were a little less. I think it is a natural concentration. The aircraft industry was located in California and on the East Coast before World War II, and that is where it has been ever since, with some exceptions. Electronic instruments and other supplies have in many cases developed around the aircraft companies.

The aircraft companies naturally took over a fair proportion of the missile business because they had the people with the necessary skills. So I think that there is a geographic concentration that is likely to change slowly. Our policy is to let the contracts where we think they can be carried out most efficiently. [Ref. 9:p. 102]

It was the recognition of this geographical concentration that led the Department of Defense (DOD) to actively seek geographic procurement diversity. In fact, the DOD conducted seminars to help acquaint some areas of the country with defense contracting criteria and promote the dispersion of defense dollars. The Midwest was singled out as the target of these seminars because Ohio, Illinois, Indiana, MIchigan and Wisconsin had, collectively, lost some six billion dollars a year in government contracts after the Korean War; their share of the military market had dropped from 27 percent to 12 percent. The primary reason for this drop was attributed to the states' failure to recognize the, then, current interest in research and development in military procurement; the missing element was cooperation

between university and industry that would have helped to spearhead research and development efforts. [Ref. 10:p. 16]

In the mid 1960s, it did appear as if the beliefs of Mr. Hitch were valid. As he had attributed product selection to technological advance, to changes in the international situation and to changes in the nation's strategic plans, procurement trends were closely aligned with the predominant assumption that limited war in Vietnam, or elsewhere, was the most likely threat from the period. [Ref. 11:p. 69] Therefore, the emphasis was on tactical requirements; increased money was to be spent on ordnance, vehicles, armaments, and spares. It was this emphasis that, perhaps, served to upset the so-called power of the "military-industrial complex."

The FY 1966 figures for the top 100 companies are unusual in many respects, but most of the departures from previous years can be traced to the war in Vietnam and the spread of business to many smaller companies. [Ref. 12:p. 17]

D. THE 1970S

1. Overview

The 1970s were a period of contradictions for the now widely understood defense political element known as the "military-industrial complex." It was an unusual period because while many scholars, columnists, politicians, editorialists and the like were berating the power and the resulting "atrocities" of the "military-industrial complex," others were providing quantitative and analytical studies

which resulted in little empirical support for the strength of political "military-industrial complex" ties. The following section will review some of the more interesting scholarly and empirical studies of the decade.

2. Empirical Studies in the 1970s

Charles Wolf, Jr., wrote an extensive paper which challenged the power of the "military-industrial complex" and provided empirical evidence to support his point [Ref. 13].

In this paper, Wolf began by asking the questions:

- Is the "military-industrial complex" an obstacle to arms control?
- If so, to what extent is it a threat? [Ref. 13:p. 1]

Before he could provide an answer to these questions, Wolf needed to construct a working definition of the "military-industrial complex." The standard definition of the "military-industrial complex" is ". . . the accepted process by which other institutions--notably the military, business, and government--work together to provide the nation with the sinews of war" [Ref. 14:p. 1]. Wolf's own view of the "military-industrial complex" is, in general, somewhat more kind than the views of the time.

The reality of the MIC [military-industrial complex] is complex not simple, pluralistic not monolithic, sometimes effective and potent, sometimes ineffective and impotent, no less motivated by concern for national interests than its critics, nor less motivated by a mixture of other motives than its critics. [Ref. 13:p. 6]

Wolf cited three empirical examples which he felt revealed a more simplistic and monolithic view of the "military-industrial complex" which was juxtaposed to the complex and pluralistic view he favored. In the first example, he presented three major public issues of the time that would involve the "deepest interests and commitments" [Ref. 13:p. 7] of the "military-industrial complex." He then predicted the outcome of congressional voting based on the simplistic view of the "military-industrial complex" to explain the results. Wolf found that the Senate and the House votes for public issues that would have easily been influenced by the "military-industrial complex" were exactly opposite as would have been predicted. The congressmen voted against deployment of the ABM and developing the supersonic transport and they voted for barring funds for military operations in Cambodia. Table II-1 summarizes this study.

The second example which Wolf presented, examined the evidence of trends in defense budgets and expenditures. He wrote that in constant 1961 dollars, defense expenditures in FY 1971 were only 10 billion dollars more than they were in 1961, with a strategic offense and defense force budget at half of what it was in 1961 [Ref. 13:pp. 8-9]. Furthermore, he predicted FY 1972 defense outlays to be substantially the same as those for FY 1971 [Ref. 13:p. 9].

Thus, while the level of defense expenditures in 1971 is still extremely large, it represents the smallest

percentage of total government expenditures and the smallest percentage of GNP, that it has represented since the start of the Korean War in 1950. Even more important, the rates of change are negative and substantial. [Ref. 13:p. 9]

TABLE II-1

TABLE OF WOLF'S STUDY

Public Issues

1. The SAFEGUARD ABM deployment in 1969;
2. The Cooper-Church Amendment, barring funds for military operations in Cambodia in June 1970; and
3. Appropriations for development of the supersonic transport in December of 1970.

Predictions

It seems reasonable that one would have predicted . . . that the proportion of Senate and House votes in support of the putative MIC position on each of these issues would have been closely associated with the relative size of Defense Department contracts by State. [Ref. 13:p. 7]

Results

If one ranks the States in order of dollars of defense contract awards per capita (for 1969), and compares that ranking with separate rankings of the States in accordance with the percentage of their combined House and Senate votes: (a) for the SAFEGUARD deployment; (b) against Cooper-Church; and (c) for the SST appropriation, one finds that the rank order correlation coefficients are $-.12$, $.1$ and $.1$, respectively. None of these correlation coefficients is significantly different from 0! The results provide no evidence of a relationship between defense expenditures by States and Congressional voting, on these key issues. [Ref. 13:pp. 7-8]

Wolf, finally, cited the General Accounting Office (GAO) study on defense profits to support his view. The GAO study concluded that defense contractors doing more than 10

percent of their business with the DOD did not have profit margins that were significantly different than defense contractors doing less than 10 percent of their business with DOD.

The GAO study showed that profit rates, before Federal income taxes, realized on equity capital investment (which excludes facilities contributed by the government) was almost exactly the same for 32 randomly selected large defense contractors doing more than 10 percent of their total business with the Defense Department as for 13 randomly selected large defense contractors doing less than 10 percent of their total business with the Defense Department. [Ref. 13:p. 10]

Wolf concludes that the data in these three examples are inconsistent with the belief that the "military-industrial complex" is a "powerful and effective obstacle to limited arms expenditures" [Ref. 13:p. 9]. And, he further wrote:

The difficulties and obstacles that lie in the way of arms control are not governed, or in most cases heavily influenced, by the military-industrial complex. The problems are just hard and complex, and the constraints often numerous and severe, quite apart from the putative role of the MIC as an organized pressure group. To say that the MIC prevents or hinders government action toward controlling arms in these fields is both to exaggerate its influence, and to underestimate the fundamental complexities of the problems themselves. Slogans blaming the MIC for our failure to move farther in the direction of arms control not only do the military an unwarranted disservice, but hinder rather than help in finding solutions by diverting attention and effort from the real problems. [Ref. 13:pp. 15-16]

A study that presents a completely different viewpoint of defense political influences of the "military-industrial complex" on weapon procurement was written by James R. Kurth. Kurth's article revolved around questions

regarding the nation's weapon policy; specifically, why some weapons were purchased while others were not. He centered his study on the aerospace industry in particular.

Does MIRV [Multiple Independent Reentry Vehicle], for example, result from calculations about Russian threats, or from reckless pursuit by weapons scientists and military bureaucrats of technological progress for its own sake, or from resourceful efforts by weapons manufacturers and their allies in Congress to maintain production and profits, or from some combination of these factors? [Ref. 15:p. 33]

Kurth set forth four broad explanation categories for his question. They were:

- "strategic" explanations--favored by policy-makers and officials and which were based on rational calculations about foreign threats or measures to keep in step with the arms race
- "bureaucratic" explanations--the outcomes of competition between bureaucracies, in particular, the military service
- "democratic" explanations--the outcomes of electoral calculations by the President and the members of Congress
- "economic" explanations--the results of the needs of the capitalist system or, in a less sweeping formulation, as the result of needs of particular corporations in the aerospace industry. [Ref. 15:p. 34]

Kurth focused on the economic explanation in his article, further defining the explanation as being composed of two parts--the "follow-on" imperative and the "bail-out" imperative. He described the "follow-on" imperative:

About the time a production line phases out production of one major government contract, it phases in production of a new one, usually within a year. In the case of new aircraft, which usually require a development phase of about three years, the production line normally is awarded the contract for the new system about three years before production of the old one is scheduled to phase out. In

the case of new missiles, the development phase usually is about two years. Further, in most cases, the new contract is for a system which is structurally similar while technically superior to the system being phased out, i.e., the new contract is a follow-on contract. [Ref. 15:pp. 38-40]

The reason for the "follow-on" imperative, in his view, was simple. A large and established production line, especially in the aerospace industry, was seen as a scarce national resource to military officers, the managers, shareholders, bankers, engineers and workers of a corporation with a line, and the congressmen and senators from the geographic area of such a corporation. The DOD was especially interested in keeping this national resource alive. [Ref. 15:p. 40]

To prove his point, Kurth examined nine corporations and the patterns of phase-out/phase-in of military aerospace systems. The results of this study are presented in Table II-2. He did not, however, solely attribute his findings to this "follow-on" imperative of the economic explanation. He felt that political imperatives of the democratic explanation were equally important.

Six of the production lines are located in states which loom large in the Electoral College: California (Lockheed-Missiles and Space, North American Rockwell, and the Douglas division of McDonnell Douglas), Texas (General Dynamics and LTV Aerospace), and New York (Grumman). The three others are located in states which in the late 1960's had a senator who ranked high in the Senate Armed Services Committee or Appropriations Committee: Washington (Boeing; Henry Jackson), Georgia (Lockheed-Georgia; Richard Russell), and Missouri (McDonnell division of McDonnell Douglas; Stuart Symington). [Ref. 15:p. 42]

TABLE II-2

THE FOLLOW-ON IMPERATIVE: MAJOR PRODUCTION LINES AND MILITARY AEROSPACE SYSTEMS

General Dynamics	North American	Boeing	Lockheed-M8S	Lockheed-Georgia	McDonnell	Douglas	Grumman	LTV Aerospace
1960 B-58	Rockwell B-70	B-52; Minuteman	Polaris	C-130	F-4	Nike Zeus d	Miscellaneous	F-8
1961	Apollo d in	Minuteman buildup	Polaris buildup	C-141 d in				
1962 B-58 out		B-52 out					F-111 sub d in	
F-111 d in								
1963							Apollo sub d in	
1964	B-70 out			C-141 p in				A-7 d in
1965				C-5A d in		Nike Zeus out		
						Spartan d in		
1966 F-111 p in	Apollo p in	Minuteman III d in	Posidon d in				F-111 sub p in	F-8 out
							Apollo sub p in	A-7 p in
1967								
1968		Minuteman out	Polaris out	C-141 out				
		Minuteman III p in	Posidon p in	C-5A p in				
1969					F-15 d in		F-14 d in	
1970	B-1 d in							
1971			Trident d in					
1972	Apollo out				F-4 out	Spartan p in	F-111 sub out	
	Shuttle d in						Apollo sub out	
							F-14 p in	
1973				C-5A out	F-15 p in			
1974 F-111 out	B-1 p in	Minuteman III out	Posidon out	STOL transport in?				A-7 out
Lightweight fighter in?		Super-slug or SST in?	Trident p in?					

d = development; p = production; sub = subcontract

The second strand of the economic explanation was the "bail-out" imperative. Kurth reasoned, by way of a 12 corporation study of the annual income and employment figures that corporations facing one of three difficulties would be "bailed-out" by the U.S. government in the form of an award of a new major military contract. The three difficulties were: a drop in sales of close to 10 percent or more from the previous year, a deficit in income and, lastly, a drop in employment of 10 percent or more from the previous year [Ref. 15:p. 42]. He concluded that DOD did, in fact, "bail-out" five of the top eight defense contractors presented in Table II-3. He did, however, feel there was a stronger case for the "follow-on" imperative as a general explanation [Ref. 15:p. 44].

The strength of Kurth's explanations come, perhaps, in this recognition of their limitations and applications.

First, a general point, the mere fact that a condition is present does not in itself demonstrate that it is important or salient in each of them. Alternative explanations may be less general but more real. [Ref. 15:p. 47]

Kurth also acknowledges that his economic explanations and imperatives may be overridden by other explanations but not without a cost, most commonly in the form of another contract award.

Strategic analysis and bureaucratic politics can enact a cancellation, but when a dominant military organization and a major aerospace corporation are involved, bureaucratic politics and economic imperatives will also exact a compensation. [Ref. 15:p. 53]

TABLE II-3

THE BAIL-OUT IMPERATIVE: CORPORATE FINANCIAL
TROUBLES AND MILITARY AEROSPACE SYSTEMS

	General Dynamics	North American Rockwell	Boeing	Lockheed	McDonnell	Douglas	Grumman	Long-Temco-Vought
1960	\$27,000,000 deficit		9% employ-ment drop	\$43,000,000 deficit		\$19,000,000 deficit 25% emp. drop Skybolt in		
1961	\$143,000,000 deficit	Apollo in	Minuteman buildup	Polaris buildup C-141 in	21% sales drop 13% emp. drop Air Force F-4 in	32% sales drop 22% emp. drop	F-111 subcon-tract in	\$13,000,000 deficit
1962	20% emp. drop F-111 in							
1963	25% sales drop							
1964				17% sales drop			Apollo sub-contract in	
1965				C-5A in		Spartan in		A-7 in
1966			Minuteman III in	Poseidon in		\$28,000,000 deficit		
1967								
1968						McDonnell Douglas merger Johnson & AAM decision		
1969		9% employ-ment drop	13% sales drop 15% employ-ment drop	\$33,000,000 deficit	11% employment drop	Nixon AAM decision 16% sales drop 13% emp. drop; F-15 in	F-14 in	\$18,000,000 deficit
1970	12% sales drop \$7,000,000 deficit 22% emp. drop	10% sales drop 22% employ-ment drop B-1 in	34% employ-ment drop	\$86,000,000 deficit 13% employ-ment drop	31% sales drop 14% employment drop	16% sales drop 21% employ-ment drop		\$70,000,000 deficit 18% employ-ment drop
1971	16% sales drop 17% employ-ment drop	10% emp. drop 1972: space shuttle in	17% sales drop 16% employ-ment drop	17% emp. drop \$350,000,000 loan guarantee Trident in		20% sales drop \$18,000,000 deficit		10% sales drop \$57,000,000 deficit 24% emp. drop

Finally, Kurth concluded that the alternative to protecting these scarce national resources, known as production lines, at any cost would be to convert aerospace lines to non-aerospace lines (i.e., mass transportation and waste disposal), convert the military aerospace lines to non-military aerospace lines and/or collapse the nine major aerospace production lines into a smaller number [Ref. 15:p. 53].

A study of the period which looked at the influences on defense procurement from a little different perspective than that of the "military-industrial complex" concentration of Wolf and Kurth was Neil Heighberger's study of Congressional representatives' constituency influence on defense policy-making; or as he called it, ethno-security program decisions [Ref. 16].

In his study, Heighberger examined the trends in roll-call votes in the 89th Congress on issues which constituted the ethno-security domain in the House of Representatives. He identified seven roll-call votes of this type, and he assigned one of a five-point score of ethno-security support to each representative [Ref. 16:p. 226]:

Each representative then was assigned to an ethno-security support score based on his voting record in the ethno-security domain. The association between constituency-related characteristics and the representative's support score is the critical relationship which will be analyzed. [Ref. 16:p. 226]

Heighberger examined four propositions that were drawn from the literature of the day:

1. Southern representatives will tend to be stronger supporters of ethno-security programs than will representatives from any other section of the country.
2. Representatives with more rural constituencies will tend to be stronger supporters of ethno-security programs than will representatives with more urban constituencies.
3. Representatives from districts which rank low in social-economic status characteristics will tend to be stronger supporters of ethno-security programs than will representatives from districts which rank high in these characteristics.
4. Representatives who represent districts which have a high direct military impact will tend to be stronger supporters of ethno-security programs than will representatives who represent districts with a low direct military impact. [Ref. 16:pp. 225-226]

Heighberger found support for his first two propositions, but the last two propositions were not supported. In the case of the last proposition he felt the evidence was less than obvious:

The impact of direct military presence in the representative's district is ambiguous. Representatives from high impact districts are clearly strong supporters, but so are representatives from low impact districts--but to a lesser degree. [Ref. 16:p. 234]

Stephen Cobb was responsible for several papers which were basically akin to Heighberger's work. He found little evidence to conclude that representatives from districts highly dependent on defense spending were likely to vote in favor of defense and foreign policies that could potentially benefit their districts:

. . . little support for the hypothesis that representatives from districts highly dependent on defense spending were more likely than representatives from nondependent districts to vote for jingoistic foreign and defense policies [Ref. 17:p. 163]

Cobb studied the House and the Senate in his works, several of which were: "Defense Spending and Defense Voting in the House: An Empirical Study of an Aspect of the Military-Industrial Complex" [Ref. 17], "Defense Spending and Foreign Policy in the House of Representatives" [Ref. 18], and "The United States Senate and the Impact of Defense Spending Concentrations" [Ref. 19]. In each of these works his findings were predominantly the same.

In his work on the Senate [Ref. 19], Cobb found that between the years 1960 and 1967, all senators usually voted in favor of defense spending. He attributed the inability to correlate spending concentrations with voting for increased spending to this fact [Ref. 19:p. 219]. He went on to explain why Senators from states with small concentrations of defense spending would also vote for defense appropriations; he found that basically there had been no reason not to vote dollars for defense:

There have been no strong forces opposing defense spending since the Second World War. Under these circumstances, there has been no strong reason to vote against defense expenditures, since there was no political opposition to punish pro-defense votes. On the other hand, there were a series of factors which promoted pro-defense voting. All Congressmen and Senators, including those from nondependent areas of the nation, have been made aware of the real and suspected dangers posed by other nations. [Ref. 19:p. 220]

However, Cobb was quick to point out that he did not expect the situation to remain unchanged:

We would expect that as pressure grows against military spending bills, either from other industries needing funding or from the public on the basis of ideological opposition, research opportunities in this area should increase. Under such circumstances, any relationship between Senate voting on defense appropriations and the concentration of defense spending in a Senator's state should be most apparent. [Ref. 19:p. 220]

In Cobb's study on the House [Ref. 17], he found much the same results; ". . . there is little support for the hypothesis that defense spending concentrations affect voting in the whole House" [Ref. 17:p. 180]. He attributed this pattern to the similar reasons for the Senate's behavior: representatives from districts with large concentrations of defense dollar contracts were under pressure from their constituents, and the majority of the representatives from districts without such large concentrations voted with a bias toward the military view prevalent since World War II. Again, there were no strong forces opposing votes for defense expenditures [Ref. 17:p. 180]. Cobb did find one exceptional group in his study. He found that there was a correlation between defense spending concentrations and voting among the very senior members.

. . . there is some indication that the relationship exists, especially with regard to measures of defense spending based on the military payroll, among the more powerful senior members of that body. [Ref. 17:p. 178]

Somewhat in contrast to the views expressed by the authors above, Leo Lukenas presented an analysis of the

budgetary behavior of the House Appropriations Committee on defense procurement which was completely devoid of reference to the influence of defense politics [Ref. 20].

The purpose of his thesis was described as follows:

At the outset, it was decided to attempt to characterize the activity of the Subcommittee on Department of Defense of the House Appropriations Committee on the basis of the reasons given for its decisions on the individual line item elements of the Defense Department Procurement Appropriation. [Ref. 20:p. 21]

An underlying assumption in his work was that the Armed Services Committees of Congress had a significant influence on the appropriation and authorization process [Ref. 20:pp. 24-25]. He chose to look at the years FY 1970-FY 1973. Each of the Subcommittee on Department of Defense of the House Appropriations Committee decisions was placed into one of seven decision categories. The decision categories were:

1. improper request
 - a. improper category--i.e., RDT&E vice O&M
 - b. premature request--i.e., testing on the procurement item was not complete, deficiencies were not corrected, full evaluations were necessary, there was an excessive concurrency between development and procurement
 - c. reductions due to cuts in related programs
 - d. insufficient priority/urgency--i.e., costs cannot be justified or made a part of budget amendments but were of insufficient urgency to warrant amendment action
2. service adjustment--i.e., cancellation of requirements, termination of contracts, deferral of procurement, program realignment, awarding of multi-year contracts, use of current assets in place of new procurement

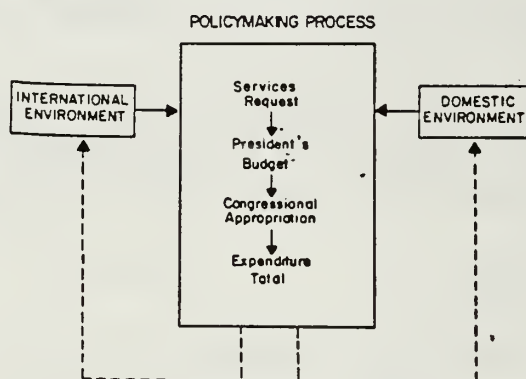
3. reduced requirement--i.e., the difference between the current actual usage and attrition rates and those used by the services in forecasting requirements during budget preparation
4. financial adjustment--i.e., reductions recommended by the Subcommittee, but immediately offset by the transfer of prior year unobligated funds or the transfer of funds from the Defense or Service Stock Funds
5. special Subcommittee action
 - a. general reduction--i.e., imposing reductions of a non-specific nature which were absorbed as the affected services saw fit
 - b. reversal of authorization decisions--i.e., nullifying the addition or deletion of funding approved during the authorization process and appropriating just what had been requested by the services
6. no reason cited
7. conformance with authorization. [Ref. 20:pp. 25-27]

The results of his study were fairly straightforward. The majority of the decisions made by the Subcommittee fell into the "improper request" decision category. And in the "improper request" decision category the reason cited most often for action was a "premature request." According to Lukenas,

These decisions reflected Subcommittee interest in program progress. . . . In such instances, the size of the funding request appeared to be secondary to the desire to avoid excessive concurrency between development and production. On a consistent basis, more decisions were made each year in response to items in the "premature request" category than any other category. . . . [Ref. 20:pp. 32,34]

Towards the end of the 1970s an explanation of the defense expenditure policy-making process became a target of

study as an interest in organizational decision-making and policy-making developed. In the article by Charles W. Ostrom, Jr., "A Reactive Linkage Model of the U.S. Expenditure Policymaking Process" [Ref. 21], a flow diagram is presented which "explains" the process:



Source: [Ref. 21:p. 943]

Figure 1. Ostrom's Reactive Linkage Model

In Ostrom's model the international environment, together with the domestic environment, act on the policy-making process. As he further explains:

The adoption of a reactive linkage orientation suggests a way in which the domestic and international environments can be combined with the organizational decision-making process. The initial policy-making rule (i.e., services' request for funds) can be viewed as a reaction to the changing conditions in the international and the domestic

environments which is then filtered through the remaining organizations (i.e., President, Congress, Department of Defense) to determine the magnitude, scale, and timing of the reaction. [Ref. 21:p. 943]

3. Political Commentary in the 1970s

One of the most interesting articles from the early 1970s on defense expenditures was written by a Representative from the House, Les Aspin. The article he wrote was concerned primarily with the inability of Congress to control military spending during this time period, and the reasons for the phenomenon.

There are, of course, any number of reasons why Congress is so pathetically inept at controlling military spending. At the top of the list, according to the conventional knowledge, are outworn cold war ideologies, the political might of the weapons industries and Armed Services Committees, whose senior members, for the most part, seem to be under the influence of both. [Ref. 22:p. 81]

Representative Aspin wrote that had the House Committee on Armed Services been a more demanding body, the right kind of issues would have been heard and the right kind of information presented in Congress to permit more knowledgeable decisions allowing for a more controlled defense budget. His criticism of the Armed Services Committee centered on who was on the Committee and for what reasons. Aspin suggests that congressmen from areas with a large concentration of defense contractors desire positions on the Armed Services Committee so that they may better serve their constituents.

When a congressman first gets elected, one of the things he immediately starts thinking about is how to get re-elected. That is, after all, what politics is all about.

To get re-elected, especially for a junior member with no chance to pass important legislation, constituent service is important. What this means is that if the congressman comes from a area in which a big defense contractor is a major employer, it helps to be on the Armed Services Committee. So junior congressmen with defense constituents aim for the Armed Services Committee (later they acquire too much seniority to change), and as a result the Committee is top-heavy with congressmen who are constituency-oriented on defense. [Ref. 22:pp. 89-90]

He believed that this constituency-oriented membership partially explained why there were generally only 10 percent of the votes in Committees for amendments to cut the defense budget as opposed to 25 to 30 percent of the votes when the amendments were brought to the House floor [Ref. 22:p. 90].

Beyond the concern for maintaining defense budgets at relatively high dollar levels, Representative Aspin felt the congressman's only other concern was where the money would be spent.

. . . the Armed Services Committee is typically less concerned about the question of how much we buying in defense than the question of where we are buying it. The Committee is less concerned about how many DD-963 destroyers the Navy should build, for example, than about who will build them. [Ref. 22:p. 91]

In the conclusion to his article, Aspin petitioned for changes that would allow for the military spending to be brought under control, and he cited some examples of initial changes already in place. In particular, he wrote that the defense budget was no longer thought of as an entity not to be tampered with by Congress. Testimony by witnesses arguing for a reduction in defense spending was being heard

before the Committee on Armed Services and dissent was more tolerated on the Committee [Ref. 22:p. 91]. Representative Aspin predicted more changes as money became more of a precious resource to be carefully conserved:

As money becomes scarcer for domestic programs, prices continue to rise and high taxes continue to be unpopular, people are bound to start looking at a bloated defense appropriation and wonder why. Why, for example, is the military asking for more money, not less, not that we're out of Vietnam? Why, especially after the SALT agreements, should the military get the peace dividend instead of the taxpayer?

If Constituents start asking these questions, it won't be long before congressmen, even those on the House Armed Services Committee, will start getting the message. And through this they may come to believe that their constituency is really much broader than just the defense industries. So the hope for change, I believe, lies in the very impulse that until now has kept the Armed Services Committee a preserve of the military-industrial complex: that is, the wholly natural, self-interested desire of politicians to serve their constituents. And when that change occurs, one of the first things on Congress' agenda will be to stop playing along with the games the Pentagon plays. [Ref. 22:p. 92]

Whereas, Aspin's view of the "military-industrial complex" centered around the fact that its influence on congressmen exacerbated their inability to control military spending, other writers in the mid- to late-1970s had a different impression of the influence of the "military-industrial complex." The impact of the "military-industrial complex" on national industry and employment became the focus. Douglas Mattern wrote in "The Economics of Death" [Ref. 23] that the potential kill capacity of the nation was well beyond what could ever be conceivably used. He questioned the reasoning behind this phenomenon, ". . . why

produce more overkill when our capacity is already rated at some 30-40 times every human being on this planet?" [Ref. 23:p. 32] His answer was based on political and economic reasons.

Politically, he wrote that ". . . the patriots desperately want to have one more warhead than the Russians in the pathetic illusions that this makes us number one" [Ref. 23:p. 32]. He was adamantly opposed to the Secretary of Defense James Schlesinger's view at the time that armaments must be increased to have disarmament become a reality. In Mattern's words, "armaments are big business" [Ref. 23:p. 32].

This statement paved the way for his economic reasoning for an overkill capacity in the nation's armaments. He wrote that while Administration officials contended that arms trade and armaments were essential to national industry, to the U.S. balance of payments and to jobs, the crime was in the high profits the defense contractors were making [Ref. 23:pp. 22-23].

Corporations must be exposed for the huge profits they derive from military contracts, and this includes the obscene policy of planned weapons' obsolescence and modification to insure the contracts keep coming in without pause. [Ref. 23:p. 33]

An equally vehement critic of the power of the "military-industrial complex" would appear to have been Norman Cousins. He cited two studies in his article "Jobs and Military Spending" [Ref. 24] which more or less refute

the generally held belief that ". . . the national economy, especially on the employment level, profited from the manufacture of armaments and the maintenance of the armed forces." [Ref. 24:p. 49]

In his review of the work of Bruce Russett and of Marion Anderson, Cousins summarizes the findings of both researchers:

1. military labor is less productive and economical than civilian labor
2. greater amounts of military money go to produce the same quantity and quality of goods that civilian dollars produce
3. a good deal of military money is not translated into employment; it goes toward weapon maintenance and supporting high salary supervisory personnel. [Ref. 24:p. 49]

He concludes the article:

Yet one of the main arguments for maintaining and enlarging the arsenals is that their reduction or limitation would trigger an unacceptable loss of jobs. Even if true, this is monstrously wicked reasoning; and the fact that the American Federation of Labor and some of our more lustrous names in Congress are identified with such reasoning makes it no less reprehensible. [Ref. 24:p. 49]

As the 1970s came to a close, a new phrase was coined and a new concern was voiced:

"People used to worry about the power of the military-industrial complex," says a retired admiral who currently works as an aerospace industry consultant. He is referring to President Eisenhower's warning that

businessmen and soldiers have an interest in dreaming up new weapons that keep defense spending high. But now, he says, "the congressional-industrial complex" frequently has a greater influence on boosting spending for more arms, particularly aircraft. [Ref. 25]

As reported by Kenneth H. Bacon for the Wall Street Journal, in his article "The Congressional-Industrial Complex," the reason for the change from the "military-industrial complex" to "congressional-industrial complex" stemmed primarily from the change in the 1970s of military procurement patterns, stricter Pentagon policies regarding contractor/military official relationships, the recognition that Congress was taking a growing role in setting defense and foreign policy, and the fact the Pentagon budget had diminished. He warned that an equally watchful guard should be kept on the "congressional-industrial complex" as President Eisenhower advised for the "military-industrial complex." [Ref. 25] This new defense political element, the "congressional-industrial complex," would be the focus of study in the coming decade.

E. THE 1980S

The 1970s brought to the 1980s a changed congressional body. Before this time, little was done about the defense budget by Congress.

When evaluating civilian agency requests, Congress--especially through its committees--has historically exhibited a sense of sureness and aggressiveness not replicated by its defense budget behavior. A variety of factors have traditionally served to undermine the congressional will to act in the defense sector, among which are self-perceived lack of expertise, the lack of a

critical link between the defense issue being discussed and the congressman's constituency, and a generalized fear of being "soft" on national security. For whatever reason, congressional impact upon the defense budget has historically been minimal. [Ref. 26:p. 415]

In the 1970s there was a shift to more 'critical attention to the military budget. Robert L. Bledsoe and Roger Handberg, in their article, "Changing Times: Congress and Defense," felt that this focusing of attention on the defense budget was due to two reasons, one, that there was now greater congressional staffing and that staffs were more professional, and, two, that the defense budget may have become the only component of the total budget that remained "controllable" by Congress. [Ref. 26:pp. 425-426] This shift is interesting in that it suggests that given the increase in focus on the military budget by Congress, the potential impact of the "congressional-industrial complex" becomes staggering.

This idea of Congress changing in the 1970s to become somehow different in the 1980s is reiterated by Roger H. Davidson and Walter J. Oleszek in their book, Congress and Its Members [Ref. 27]. They, however, view the reason for the change a little differently:

Today's independence and deference to electoral considerations is embodied in then-Representative Phil Gramm's declaration: "I'm gonna' dance with them that brung me"--meaning his voters back home. [Ref. 27:p. 377]

In their book, Davidson and Oleszek review many of the determinants of congressional voting, all or none of which could determine congressional voting on foreign and defense

policies and budgeting. The determinants as they describe them are:

1. the party--". . . the institutional push toward partisan voting cannot be ignored." [Ref. 27:p. 391]
2. the constituency--"While the impact of the constituency upon individual decision making has been studied extensively, the conclusions from those studies are not altogether clear." [Ref. 27:p. 391]
3. ideologies--many congressmen and senators do vote ideologically [Ref. 27:p. 391]
4. the presidency--"In many areas of policy making, Congress responds to presidential leadership. Although Congress often pursues an independent course and few members feel a deep loyalty to the occupant of the White House, incumbent presidents do influence decisions reached by individual senators and representatives." [Ref. 27:p. 395]

Basically, there are three factors that the authors found that influence the correlation between the presidency and congressional voting. First, they asserted that modern presidents achieve at least half of their legislative objectives. Second, partisan swings will affect the influence of the president. And, finally, third, that presidents tend to lose congressional support as their Administrations age. [Ref. 27:p. 395]

Davidson and Oleszek further presented a review of other studies which put forth various ideas as to determinants and cues to congressional voting. Some of the cues were party leaders, committee chairmen, and fellow members. [Ref. 27:pp. 396-397] The final determinant in the arena of congressional voting that they pointed out was "logrolling"; they defined the term as

. . . a bargaining strategy in which the parties trade off support so that each may gain its goal. In its most visible form, trading is embodied in a something-for-everyone enactment--known as "pork barrel". . . . [Ref. 27:p. 399]

An article written for Time magazine, "Weapons That Refuse To Die," by Ed Magnuson, is probably the best illustration of the voting behavior of Congress in the 1980s [Ref. 28]. In his article Magnuson states, "A Congressman's drive to protect his home turf often saves weapons that ought to fade away." [Ref. 28:p. 15] And further,

The process again illustrated how hard it is to kill hugely expensive systems once they have established a toehold. Almost every new weapons proposal gets quick Capital Hill approval for research and development, since this seed money is fairly small. After that, it is virtually impossible to stop, no matter how high the costs soar above original estimates. "Once a system nears the production stage it's too late," says Maine's Republican Senator William Cohen. "There's such a constituency of the Pentagon, the contractors and potential job holders that no democratically elected Congress can say no." [Ref. 28:p. 15]

F. SUMMARY

This review of some of the literature written on the influence of defense politics in the area of defense procurement and/or expenditures is not intended to be viewed as all-encompassing or definitive. It is simply the intent to provide a sampling of the more varied and interesting writings on the subject.

Naturally, most all of the views and studies presented in this review have counterpart views and studies, some in concurrence and some in opposition. For example, Arnold

Kanter and Stuart Thorson developed an alternative theory of weapons procurement in their article, "The Weapons Procurement Process: Choosing Among Competing Theories" [Ref. 29], to the theory of the "follow-on" and "bail-out" imperatives put forth by Kurth reviewed here. They propose a weapons procurement theory which simply states:

The more heavily a project can be committed in the early periods of research and development, the greater the probability of its subsequent production and deployment. [Ref. 5:p. 12]

Similarly, Stephen Cobb's findings in his studies were inconsistent with the studies by Gray and Gregory, "Military Spending and Senate Voting" [Ref. 30], and by Bruce Russett, What Price Vigilance [Ref. 31]. The findings of Gray and Gregory and Russett

. . . have found small but statistically significant correlations between defense spending concentrations and voting in the Senate on some but not other clusters of complex-related issues. [Ref. 5:p. 14]

Beyond providing a sampling of the writings on the subject of the defense politics, the purpose of this chapter has been to provide a backdrop to study the influences on defense procurement during the Reagan Administration. Specifically, the following questions would naturally seem to arise after contemplating the foregoing literature review:

1. Is the prosperity of the nation, in particular California, dependent on the might of the "military-industrial complex," as Cook suggests?
2. Are the defense procurement dollars spent in geographic locations where the industries are located

as the Assistant Secretary of Defense, Charles J. Hitch, suggested?

3. Do the shifts in strategic plans and the ever-changing international situation dictate the product mix of defense procurement?
4. Does the "military-industrial complex" hinder arms control, as denied by Charles Wolf, Jr.?
5. Have the "follow-on" and "bail-out" imperatives, as developed by Kurth, been operating during the Reagan Administration?
6. Has the impact of direct military presence in the districts of the House representatives been more or less ambiguous during this period than Heighberger reported?
7. Has the make-up of the Armed Services Committees been more or less peopled with a defense contract constituency-oriented membership during the Reagan Administration? If so, how has the membership impacted on the votes in Committee?
8. Have the votes of the senior members of Congress correlated to concentrations of defense spending during the Reagan Administration as Cobb found in earlier years?
9. Has there been an institutional push towards partisan voting on defense procurement issues during the Reagan Administration, as Davidson and Oleszek suggest?

Certainly not all of these questions can be answered in this case study, the best that can be gained from the study of the time period of the Reagan Administration is a revelation of trends in defense procurement that might somehow be linked back to one or more of the defense political influences described here.

The following chapter will discuss the Reagan rearmament plan and the presence of defense political influences during the Reagan Administration in six specific instances.

III. THE REAGAN ADMINISTRATION REARMAMENT PLAN AND DEFENSE POLITICS

A. THE SUPPORT

The time was obviously right, for there could be no other explanation for the widespread support that President Reagan garnered for his plan to build up the military forces with never-before-seen dollar expenditures in a time of peace. The predisposition of the American public to accept this massive rearmament plan was traced easily to the current events of the day.

The year 1980 was one of perceived national security crisis by the American public. The country had experienced a series of defense and foreign policy shocks. The Iranian revolutionaries held fifty Americans captive in the embassy in Teheran; Americans were witness to the Soviet invasion of Afghanistan on the nightly news; Soviet combat troops were discovered in Cuba; the ratification of the SALT II treaty, designed to limit the strategic arsenals between the United States and the Soviet Union had been postponed by Congress and the Carter administration. Moreover, it was an election year and the Republicans were advocating significant increases in annual defense expenditures for the coming years. [Ref. 32:p. 8]

The fact that the plan was not questioned more by the public was a curious phenomenon to many policy-makers, economists, editorialists and journalists; after all, it was the largest military buildup in peacetime history.

Yet for all its revolutionary impact, the massive defense buildup planned by the Reagan Administration--the largest peacetime rearmament since World War II--has so far drawn little dissent. [Ref. 33:p. 28]

In his thesis, A Review of the Debate Concerning the Reagan Administration's Increase in Defense Spending [Ref. 32], Howard Couch cited two surveys which help to quantify the amount of support the Reagan Administration would enjoy once elected into place by the majority of voters. A survey conducted in the early months of 1980 by NBC News and the Associated Press found that 55-74 percent of the public surveyed favored increased defense spending, while only 5-13 percent favored decreased spending. What makes this survey particularly interesting is the fact that the same poll in 1978 had found 26 percent of those surveyed favored defense increases and 51 percent wanted defense decreases. Similarly, a poll conducted by the National Opinion Research Center in 1980 found 60 percent of those surveyed felt too little was being spent on national defense compared to the results of the same poll conducted in 1973 and 1978 when 12 percent and 29 percent, respectively, of those surveyed felt too little money was being spent on defense. [Ref. 32:pp. 8-9]

Months after the election and into his first term as President, Reagan's rearmament expenditures were still viewed by the American public as a good thing. Newsweek conducted a survey in 1981 which found that 64 percent of the American public approved of increased defense spending, 54 percent expressed a desire that the U.S. establish a clear military superiority over the U.S.S.R. and 48 percent

of the American public believed that the Reagan Administration had developed an effective defense policy. [Ref. 33:p. 29]

Naturally, and perhaps more understandable than its support from the general public, the Reagan Administration's rearmament plan drew support from the powerful "military-industrial complex" and the "congressional-industrial complex." Thomas Ferguson and Joel Rogers wrote extensively about this backing for Nation [Ref. 34]. They felt that the Administration drew supporters from internationally competitive industries and the declining domestic industrial sectors because they would have had the most to gain from the buildup, or the "fortress mentality" of the Administration [Ref. 34:p. 439]. Ferguson and Rogers also wrote about individual supporters, and the implication is clear that these backers were serving their own interests:

Prototypical of Reagan's early foreign policy supporters was retired admiral and former Joint Chiefs of Staff Chairman Thomas Moorer, a walking incarnation of the military industrial complex who currently serves as a director of Texaco, Fairchild, Alabama Drydock and Shipbuilding, United Services Life Insurance, the U.S. Strategic Institute and the Retired Officers Association, advisor to the Admiral Nimitz Foundation and president of the Association of Naval Aviation. . . . Other prominent and typical early supporters included issues advisor Edwin Meese, who is a former vice president of aircraft parts supplier Rohr Industries, and Donald Rumsfeld, who served as NATO ambassador under Richard Nixon and Secretary of Defense under Gerald Ford and is currently president of G.D. Searle and Company, a RAND trustee and a director of several corporations, including Bendix. [Ref. 34:p. 439]

This widespread support was threatening to some critics of the rapid growth in expenditures. Gordon Adams, in the

article he wrote for The Bulletin of Atomic Scientists [Ref. 35], expressed the fear that such extensive backing would limit the opportunity for debate and lead to "rubber-stamping" defense expenditures:

It has been difficult to reverse the tide of military spending buildup. It is especially difficult to broaden the debate over the meaning of national security by introducing perspectives differing from those of individuals and institutions that have made national security and defense procurement policies since 1945. The "iron triangle" of defense policy--that historic relationship linking the Defense Department to its Congressional supporters and the defense industry--has dominated the debate, sharing information, policy access and influence and defending itself from outsiders and alternatives. [Ref. 35:p. 8]

However, this was not to be the case during the Reagan Administration. A large part of the debate was waged by leading policy-makers and economists. More than not, the debate surrounded questions concerning, first, the lack of strategy and defined goals in the buildup [Ref. 36:p. 30], and, secondly, the role that increased defense spending would have on the economy, social program expenditures and the federal deficits [Ref. 32:p. 9]. The following section will describe these two facets of the debate.

B. THE DEBATE

Time and time again, the critics of the Reagan rearmament plan cited its lack of a clear strategy or a defined goal as its major character defect. Strategies or goals were guessed at and couched in general terms, detailed as follows:

- ". . . the buildup is going ahead without any clear strategy--except to send a signal of American resolve to the Soviet Union" [Ref. 33:p. 28].
- ". . . money throwing at defense with little strategy or defined goals" [Ref. 36:p. 30].
- "We've got a national military strategy called M-O-R-E," challenges defense specialist John Collins of the Congressional Research Service. "We have a request for \$1.5 trillion over the next five years with no policy behind it." [Ref. 36:p. 30]
- That approach [the strategy of M-O-R-E] shows in the line items in the Reagan defense budget, which are mostly expanded versions of programs and procurement policies endorsed by the Carter Administration. And a close look shows that many of them are ill-served to achieve the ambitious goals described by Weinberger. Most military experts agree, for instance, that there is a desperate need for lighter, simpler and more mobile equipment than the United States now has in its arsenal, if conventional forces are to be deployed rapidly around the globe. Yet much of the stepped-up spending is destined for heavier and even more complex munition such as "big deck" aircraft carriers and massive M-1 tanks. [Ref. 36:p. 30]

This rather dim view of the Reagan rearmament strategy is somewhat surprising in that the Administration formed a defense transition team to help prepare for the buildup. The team leader, William R. Van Cleeve, and his deputy, Ben T. Plymade, had worked in the private sector in the area of strategic weapon systems before coming to the team, and they adamantly voiced that the team was not a "policy-making unit . . . seeking to force their concepts of weapons systems and programs on the services" [Ref. 37:p. 16]. Van Cleeve explained the team's charter as simply to help turn the military around; specifically:

If we have any general direction at all, it isn't so much in terms of specific programs or solutions; it's in terms

of what we feel is the major problem--getting us out of the mess our military is in as rapidly as we can. [Ref. 37:p. 16]

The "mess" that Mr. Van Cleeve was generally referring to is the fact that the U.S. had fallen behind the U.S.S.R. in the arms race, as the Soviets had continued to build up conventional and nuclear war capabilities while the U.S. had stagnated in its military pursuits, and in some instances actually regressed. As President Reagan noted upon assuming office in January of 1981; the military was in poor shape:

I was appalled by what I found: American planes that couldn't fly and American ships that couldn't sail for lack of spare parts and trained personnel and insufficient fuel and ammunition for essential training. The inevitable result of all this was poor morale in our Armed Forces, and difficulty in convincing our most experienced military personnel to stay on. [Ref. 32:p. 35]

The idea was to have the team start with a "clean sheet," determining what the defense needs were without regard to costs. The services were asked to provide responses to issue papers provided by the transition team. This was not a flawless procedure in that there were problems with the services' replying to the issue papers:

The services are so used to being forced into programs they have not sought and having to take funds from other programs they want and need to pay for them that they are leery about supporting some of the new Administration's programs "until they can see the money for them on the table," one top-level Pentagon official said. [Ref. 37:p. 18]

Needless to say, a defense plan was developed and budgeted for use by the Reagan Administration:

The blueprint being used for the Reagan budget is a defense plan drawn up by a bipartisan group of congressional staff members working mostly in the areas of national security and foreign policy. [Ref. 38:p. 14]

All planning had been based on the idea that the U.S. would have to deal with a major confrontation with the U.S.S.R. and possibly a "brushfire" in the Third World. Now, the plans called for a multi-front confrontation with the Soviets in Europe and the Persian Gulf. Caspar Weinberger, the Secretary of Defense, believed in a strategy which planned for two and one half long conventional wars. [Ref. 33:pp. 29,31] Plans were to bolster the conventional forces, stress the development of a Rapid Deployment Force and leave the American nuclear strategy intact [Ref. 36:p. 30]. The top priorities were to protect Europe and Northern Asia and to begin to deal with the new strategic zone in the Persian Gulf [Ref. 36:p. 39]. In terms of numbers, the Administration was looking to build four new Army divisions, 150 new ships and five more Air Force wings. The overriding theme was simply ". . . not just to deter Soviet aggression but to defeat it" [Ref. 33:p. 29].

According to Deputy Defense Secretary Carlucci, the Reagan Administration hopes that once the world recognizes that America intends to forge real new military strength, friends will be "more inclined to work with us and stand up and be counted" and enemies will "think twice about doing things which fundamentally undermine Western interests." [Ref. 36:p. 39]

The second aspect of the defense buildup that sparked considerable controversy was its potential impact on the United States' economy. Traditionally, a buildup of this

kind had created inflationary pressures on the economy and reduced productivity [Ref. 32:p. 10]. There was the additional concern at this point that the nation's defense industry could not live up to the new product demands.

This time, the defense binge will be accompanied by domestic spending cuts but also hefty tax cuts, making it all the more difficult to curb inflation. Many experts also question whether the defense industry, much shrunken in recent years, can deliver new weaponry on time and within budget--and, if not, the costs will go higher still. The buildup also threatens to divert resources from more productive investment, perhaps delaying the revitalization of U.S. industry. America's allies, unburdened by high defense spending, may gain a competitive edge while America renews its role as the arsenal of democracy. [Ref. 33:p. 28]

The economic argument against the buildup basically revolved around the anticipated inflation it was expected to bring. The fact that the defense industrial base had diminished during the preceding years of austere defense funding was expected to lead to shortages and rising costs as smaller numbers of defense contractors and subcontractors jumped back into the saddle and competed with the civilian market for labor, parts and production machinery [Ref. 32:pp. 44-45].

After years of dampened military spending, the U.S. defense industry has dwindled substantially. More than 2,000 aerospace subcontractors left the field between 1968 and 1976, for example, and 240 forging foundries have closed. There are scattered shortages of men and material and many firms have cut capacity. [Ref. 39:p. 40]

In addition to the shortages and rising costs, a topic of serious deliberation was whether or not the defense

industries could fill the orders at all, more or less on time:

Industry analysts say the nation's prime defense contractors do have the capacity to fill the new orders--at least in the short run. In the aerospace industry, for example, the military buildup will simply take up slack left by declining orders for commercial jets in recent years. But the squeeze may well be felt at the subcontractor level. Bottlenecks are inevitable, defense experts warn, because so many smaller firms have left the defense business for more dependable commercial contracts. [Ref. 39:p. 40]

In his thesis [Ref. 32], Couch provided empirical evidence that there was in fact enough excess industrial capacity to head off the predicted inflationary pressures during the Reagan buildup [Ref. 32:pp. 46-47]. He, additionally, provided empirical evidence to counter the argument of rising shortages and costs for defense related labor:

. . . projections that shortages of skilled labor and technical talent would drive up the cost of labor did not occur. With the Reagan buildup well underway, a small degree of slack exists for the areas of employment considered to be most critical. A properly functioning, free market system coupled with innovative changes in the work place to include an increased use of automated machinery have eased the labor situation. [Ref. 32:p. 89]

Another primary economic concern voiced by many critics of the Reagan buildup was the blow that such a massive diversion of resources to a defensive end would have on the nation's productivity, long-run growth and competitiveness in the world market. Specifically,

- Such circumstances would place the United States at an increasing disadvantage vis-a-vis economic competitors who are not burdened with commensurately heavy military

costs. "Since we won't be investing in non-defense industries, we won't be building a base for exports," says James Chace, managing editor of Foreign Affairs magazine, and if America's industrial base becomes too strained, the nation may have to increase its purchases from abroad. [Ref. 40:p. 46]

- In the past, argues Thurow [MIT economist], the United States could afford a relatively larger military burden because it had a technological lead over its competitors. But now, he says, "We're in a world of technological equals and can't afford to do the things we did in 1966." Thurow is also worried that the buildup will drain resources from such industries as aerospace and electronics, which still hold a technological edge over foreign competition. [Ref. 40:p. 46]
- Testifying before Congress in 1983, Degrasse [military spending critic] stated that approximately thirty percent of the Nation's scientists and engineers were working for defense-related projects. DeGrasse further explained that by having such an important group of people unavailable to develop civilian technologies, U.S. products will be less competitive on the world market. . . . [Ref. 32:p. 57]

Couch again comes to the rescue and provides empirical evidence in his thesis that the nation's productivity has increased during the Reagan rearmament plan. He finds that an analysis of the productivity data for business and manufacturing sectors shows a slowing in the 1970s when defense spending was down and an increase from 1981-1984 during the Reagan's Administration's buildup [Ref. 32:pp. 59-60]. The reasons for this increase are varied, but the primary reason seems to be attributable to the fact that the government can afford, with its considerable capital, to employ scarce material, resources and engineering talent to ferret out answers to highly complex problems [Ref. 32:pp. 58-59].

The logic behind this theory is that by providing an initial market and premium prices for major advances, defense purchases have speeded the introduction of new technologies. . . . Initial purchases such as these by the defense department have allowed manufacturers to improve their productivity through better production methods and reduced cost via the concept of marginal productivity. [Ref. 32:p. 59]

With this general presentation of the Reagan Administration's rearmament plan and the controversy surrounding it, the next step is to examine whether or not the plan afforded new opportunities for the gamesmen of defense politics to practice their skills, and, if so, what their gamesmanship looked like in the context of particular defense procurement and expenditure efforts.

C. DEFENSE POLITICS IN THE REAGAN ADMINISTRATION

Six case studies typify defense politics during the Reagan Administration. The six studies, presented in this section, are:

1. the B-52 strategic bomber replacement
2. the A-10 Thunderbolt II and the F-16 Fighting Falcon
3. the C-5 debate
4. the F-18 Hornet
5. the DOD Research Initiative
6. the Strategic Defense Initiative.

In each of these case studies elements of defense politics in the form of the "military-industrial complex," the "congressional-industrial complex," and/or pork barrel are evident. This is not surprising given the promise of

such huge defense expenditures during the Reagan Administration. As the cases show, in some instances, as in the case of the C-5B transport aircraft, the defense political influences produce a better weapon system choice. However, in other cases, such as the F-18 fighter bomber aircraft, defense political influences force a weapon system on the services that they do not feel can do the job. And, finally, the influence of defense politics in making weapons choices that are neither "good" or "bad," but simply choices that are "made" involves systems like the B-1B bomber.

1. B-52 Strategic Bomber Replacement

The replacement of the B-52 bomber was an issue of considerable debate both during the period before the Reagan Administration and during the Administration. Despite the controversy, however, the preferences of the president appeared to be the outcome in most years:

Congress is used to following the Administration's lead--any Administration. As Representative Les Aspin (Wisconsin) pointed out, when President Ford was for the B-1, Congress was for the B-1. When President Carter was against the B-1, Congress was against the B-1. And now that President Reagan supports the bomber so does Congress. [Ref. 41:p. 13]

In 1980 there was considerable congressional concern that President Carter's decision to cease production of the USAF/Rockwell International B-1 was detrimental to the U.S. strategic nuclear weapons deterrent [Ref. 42:p. 12]. The decision was whether or not to modify the already existing B-52 to carry cruise missiles in anticipation of new

technologies that could lead to building the stealth bomber or build the B-1 bomber and jeopardize the possibility of being able to afford the stealth bomber in the future. Criticisms of the B-52 were simply that it could not penetrate Soviet air defenses; by the late 1980s the "look-down, shoot-down" capability of the Soviet radar planes would eliminate the B-52s [Ref. 43:p. 35]. The B-1 was criticized because it was believed that it, too, in the 1990s would eventually become vulnerable to Soviet air defenses, and its cost was such that its deployment might preclude the building of the stealth bomber [Ref. 43:p. 35]. Carter's Under Secretary of Defense, William Perry, said that money spent on the B-1 "would rule out a stealth follow-on" [Ref. 43:p. 35].

The action on the Fiscal Year 1981 budget saw a resurgence of interest and spending on the B-1 bomber. During the congressional testimony for the year concerning the B-1, Secretary of Defense Harold Brown and Chairman of the Joint Chiefs of Staff, General David C. Jones, were soundly reminded where dollars for defense go is sometimes not in line with their desires.

Rep. Bob Wilson (R.-Calif.) told Brown and Jones that Fiscal 1981 is the most momentous year since Vietnam and that the B-1 cancellation is a tragedy and "maybe we can change that this year." Wilson added that Congress will put money in the budget for the B-1 if the Def. Dept. does not ask for it. . . . Both Brown and the general were castigated over the earlier decision to stop the B-1 production and for not backing the bomber. Rep. Jim Lloyd (D.-Calif.) told Brown and Jones they had not worked well with the House Armed Services Committee in the past,

adding that he believes Jones is strongly against the B-1 bomber. [Ref. 42:p. 13]

The outcome of the controversy for FY 1981 was basically to let the new president make the final decision with some authorization made for development and initial procurement and some appropriation for development. Exact dollar figures for the weapon's authorization and appropriation are printed in Table III-1.

In 1981 President Reagan was extremely supportive of the B-1 deployment. He, as well as a cadre of Air Force officers, urged its approval in Congress.

They argue that the B-1 has been redesigned and could now play a crucial role in conventional warfare, just as the B-52 was a workhorse in Vietnam and, more recently, has flown surveillance missions over the Arabian Sea. As more B-52s are converted to cruise-missile carriers, they say, there are fewer available for such conventional roles. What's more, the new B-1 would be a better plane than the original model. Known as the "B-1 derivative," it would have fixed wings, rather than swing wings, freeing interior space for more fuel and ammunition, and it would fly at subsonic rather than supersonic speeds, enabling it to be built with special alloys that are less easily detected by Soviet radar. [Ref. 43:p. 35]

The concern in Congress over President Reagan's decision to support the deployment of the B-1 was that "Reagan might short-change the stealth in order to fund the B-1" [Ref. 44:p. 35]; a concern also voiced during the Carter Administration. There was some additional doubt expressed as to Reagan's ability to deploy the B-1 and at the same time continue to fund other key items in his rearmament plan:

TABLE III-1

BOMBER AUTHORIZATION AND APPROPRIATION
(in millions)

	Carter Request No./Amt.	House Passed No./Amt.	Senate- Passed No./Amt.	Final No./Amt.
FY81				
Authorization				
-B52 mod	-/214	-/149	-/215	-/156
-Strategic Weapons Launcher (based on B-1)	-/0	-/600	-/0	-/0
-Manned Penetrating Bomber	-/0	-/0	-/91	-/375
Appropriation				
-New Bomber	-/-	-/175	-/375	-/300
<hr/>				
FY82				
Authorization				-/2,103
Appropriation				-/2,093
<hr/>				
	Reagan Request No./Amt.	House- Passed No./Amt.	Senate- Passed No./Amt.	
FY83 B-1				
Authorization	7/4,654	7/4,654	7/4,654	
Appropriation	7/4,600	7/4,600	7/4,600	
<hr/>				
	Reagan Request No./Amt.	Enacted Authorization No./Amt.	Enacted Appropriation No./Amt.	
FY84 B-1	10/3,762	10/3,762	10/3,762	
BY85 B-1	34/7,103	34/7,103	34/7,7071	
FY86 B-1	48/5,462	48/5,462	48/5,162	

Source: Congressional Quarterly Almanac (1980-1985)

Reagan favors the new B-1, but he is also on record as wanting to build more ships and raise military pay and benefits to retain experienced soldiers. [Ref. 43:p. 35]

The key to Reagan's success in gaining support for the B-1 bomber for FY 1982 lay in the hands of the Chairman of the Senate Defense Appropriations Subcommittee, Ted Stevens (Republican-Alaska).

The only chance for an anti-B-1 amendment to prevail was if Defense Appropriations Subcommittee Chairman Stevens followed up his vociferous criticism of the program with an effort to win votes against the B-1. If Stevens had voted against the B-1, he would have carried a number of Committee Republicans with him as well as some moderate Democrats, and might have even prevailed by a close vote on the Senate floor.

But the White House and the Pentagon got to Stevens. His opposition to the B-1 was transformed into strong support. [Ref. 41:p. 14]

In the end, the B-1 program was authorized and appropriated in FY 1982. The dollar amounts are included in Table III-1, for FY 1982 through 1986. The new B-1B bomber aircraft is built by Rockwell International's North American Aircraft Operations located in El Segundo, California.

2. The A-10 Thunderbolt II and the F-16 Fighting Falcon

In 1982 the House approved \$357 million for 20 A-10 Thunderbolt II planes which are used for close air support for battlefield troops. The Pentagon didn't want the planes. As a top general from the Tactical Air Command was quoted:

The A-10 Thunderbolt II is a most unsophisticated plane. Pilots joke about being struck from behind by birds. . . . We are buying them only because of political pressure. [Ref. 45:p. 30]

The last A-10 was to be delivered in 1982 but in the FY 1982 budget Representative Addabbo (Democrat-New York) and other New York delegates were able to extend the production run of the A-10 so that the Farmingdale, New York, factory, located near Addabbo's district, could stay open. The factory employed about 6000.

The A-10 is often referred to as "Joseph Addabbo's plane," after the Democratic Congressman from Queens, N.Y.; his district is near the Long Island plant where the fighter is made by Fairchild Republic Co. Addabbo, chairman of the Defense Subcommittee of the House Appropriations Committee opposes such big-ticket military items as the B-1 bomber and the MX missile on the grounds of cost. But like most of New York's delegation he is a strong advocate of the A-10. The project is also supported by House Speaker Thomas P. O'Neill of Massachusetts; the engine for the plane is made in Lynn, Mass. [Ref. 45:p. 30]

Congress authorized \$229.7 million for 20 A-10 planes in FY 1982. The appropriation for the plane was \$209.7 million to procure 20 A-10s and \$20 million for components of additional planes to be funded in FY 1983. [Ref. 44:pp. 226,328]

Unfortunately, with respect to the FY 1983 appropriation, Representative Addabbo was up against some tough competition in winning funds for "his" plane despite the House's approval of funds; Senator John Tower was interested in approval of funds for the F-16 which was built in Texas.

The chairman of the Senate Armed Services Committee is Republican John Tower of Texas; the F-16 Fighting Falcon is made in Fort Worth by General Dynamics Corp. Tower's committee cut all funds for the rival A-10. [Ref. 45:p. 30]

However, Representative Addabbo was confident that the funds would be restored in conference despite the fact that the Pentagon accepted the cut without question [Ref. 45:p. 30].

For FY 1983 the authorization for 120 F-16s with \$1.711 billion and an additional \$323 million for components was approved; the total number of planes that could be built in the following two years was, thus, 150. Appropriations for the 120 F-16s (\$1.71 billion) were agreed upon by the House and Senate. There were no funds authorized or appropriated for the A-10. [Ref. 46:pp. 81,281]

3. The C-5 Debate

It was referred to as one of the fiercest and shameless lobbying battles that Congress had seen in decades [Ref. 47:p. 14]. The focus of the battle was the selection of the best transport plane for the Rapid Deployment Force (RDF):

Six months of jockeying between the Pentagon and Congress over what to buy as a long-range ferry aircraft for the Rapid Deployment Force (RDF) has erupted into one of the roughest procurement battles Washington has seen in years. Defense Dept. officials claim that Congress is playing politics with what must be a military decision. Congress is split into warring camps, and the aerospace industry is in turmoil. [Ref. 48:p. 91]

The ferry plane was essential as the 70 C-5s and 234 C-141s, both types built by Lockheed, were not sufficient to transport 86,000 RDF troops plus equipment and supplies to support a war in the Persian Gulf and in Europe [Ref. 48:p. 91].

Boeing, Lockheed and McDonnell Douglas were in the competition to provide a long-range transport plane. All of the companies needed the work, but Boeing, whose profits were down 38 percent in 1981, was in the most desperate need of work as the market for commercial widebody jets had fallen off. [Ref. 48:p. 91]

The Lockheed plan provided 50 modernized Lockheed C-5B airlifters and 44 McDonnell Douglas KC-10 tankers; the cost for the planes would be \$11 billion with a delivery date three years sooner than the Boeing plan. The Boeing plan was to provide 48 new 747s as substitutes for the Lockheed 50 C-5Bs or, alternatively, the Department of Defense was to buy 50 used 747s and contract with Boeing to modify them. Each new 747 would cost \$58 million, and a used one would cost \$44 million with \$32 million going to the airlines. The cost of the C-5B was to be \$98 million a piece.

In January of 1982, the Department of Defense selected Lockheed to build the new long-range ferry aircraft that they called the airlifter. Boeing was able to persuade the Senate to overturn the decision.

One of the things that helped the Boeing decision in the Senate, besides the dollar savings, was the predicament of the national airlines. Senator Henry M. Jackson (Democrat-Washington) was instrumental in bringing this point to the attention of the Senate; he said by purchasing

the used 747s that "the airlines would get a much needed shot in the arm" [Ref. 48:p. 91]. Coincidentally,

On May 13, the day the Senate voted on the defense authorization bill, Braniff declared bankruptcy. Looking to trim money from the military budget and to help distressed airlines, the Senate by voice approved Jackson's proposal to buy the 747s. [Ref. 47:p. 14]

In the end, the Boeing decision was not only important to the airlines but it was also most important to Senator Jackson in that the Boeing company was located in his home state. Both he and Senator Slade Gorton (Republican-Washington) fought relentlessly for Boeing.

The Senate found the Boeing proposal too sweet to pass up. In mid-May it voted against its won Armed Services Committee recommendation to fund the C-5 procurement plan and told the Pentagon to order widebodied jets instead. Henry M. Jackson (D-Wash.), a veteran of 42 years in Congress, led the fight for Boeing, claiming that high unemployment in his home state--in part induced by layoffs at Boeing--would jeopardize his reelection in November. "Jackson won because he called in every political IOU he'd ever collected," complains one pro-Lockheed Senate staffer. [Ref. 48:p. 91]

Senators Sam Nunn (Democrat-Georgia) and Mack Mattingly (Republican-Georgia) had been proponents in the Senate for the C-5B that would have been built by Lockheed in Marietta, Georgia. After their battle was lost in the Senate, it was up to their counterparts in the House to take on the cause.

Smooth-tongued Georgians led the House forces for the C-5B, which was to be built in Marietta, Ga., while a squadron of Boeing backers from Washington and Kansas derided Lockheed's plane as the Edsel of the air. [Ref. 47:p. 14]

One of the Boeing backers from Washington was Representative Norman D. Dicks (Democrat-Washington) who was to ". . . move as Jackson did in the Senate, to strike C-5 funding and substitute money for the 747s" [Ref. 48:p. 92].

However, a massive lobbying effort was mounted by the Pentagon and Lockheed. One of the basic objections voiced by the lobbyists was that the decision in the Senate was made to basically "bail-out" Boeing rather than focusing on the appropriate plane for the mission: "Now Lockheed and Pentagon officials are claiming that the Boeing proposal amounts to a financial bailout of both Boeing and the airlines" [Ref. 48:p. 91].

In June of 1982, a 27 page print-out was obtained from Lockheed which indicated that Air Force and DOD officials met every morning with Lockheed executives to plan strategies for obtaining support for the C-5B. One of their strategies was to lobby 250 congressmen by military personnel or the representatives from the 40 companies who did subcontractor work on the C-5B. [Ref. 47:p. 14]

Even the key players at the Pentagon participated in the lobbying to some extent. The Secretary of the Air Force, Verne Orr, proclaimed that Boeing had understated the cost of buying and operating the 747s by almost \$5.3 billion [Ref. 48:p. 92]. Boeing did not sit still for that accusation:

Boeing's big guns have an answer to that. "The Pentagon has increased Boeing's firmly committed cost of its 747

proposal by 40% for reasons not known to Boeing," Chairman Thornton A. Wilson charged in a stinging letter to the House Armed Services Committee. [Ref. 48:p. 92]

Deputy Secretary of Defense Carlucci continued the effort to garner support for the C-5B by claiming that the 747 was not roomy enough for tanks, helicopters or howitzers. He said that ". . . it would do absolutely nothing to solve our main airlift requirement, which is much more capacity for outsized military equipment" [Ref. 48:p. 92]. He also complained that the 747 would take too long to unload and require special equipment to do so; whereas, the C-5B had flexible landing gear that would allow it to "kneel" to be unloaded. Again, Boeing had an answer. Boeing suggested that the currently available C-5s be devoted to transporting outsized equipment and that the 747s be used for all other transporting requirements. They countered the difficulty in unloading argument by saying that 747 landing devices are positioned world-wide to handle commercial cargo and could easily be transported to military destinations. As a final argument, Boeing said that the 747 could be flown from the East coast of the United States to the Persian Gulf without refueling in the air, unlike the C-5B. [Ref. 48:p. 92]

Despite Boeing's "answers" to hard questions, the relatively lower cost for the 747s and Representative Dicks' support for the substitution of the 747, the House Appropriations Committee approved \$847.5 million for the C-5B,

including funds for components and spare parts [Ref. 46:p. 284].

The panel also include \$60 million, which had been added to the authorization bill, to buy three wide-body commercial jets. The panel said these should be assigned to Air National Guard units. The \$60 million was intended to mollify members who had attempted to kill the revival of the Lockheed Corp. C-5 production line in favor of buying Boeing 747s. [Ref. 46:p. 284]

The House finally approved the appropriation for the C-5B:

Eventually the company, the Air Force and a strong endorsement by President Reagan persuaded the House that the 747 did not have the cargo capacity required by the Rapid Deployment Force: with a ceiling height of just 16 feet, the Boeing plane required that tanks and helicopters be taken apart and then reassembled at the landing site, greatly delaying their entry into battle. [Ref. 49:p. 50]

In August the House and Senate Conference Committee approved the purchase of 50 C-5B planes. Lockheed of Marietta, Georgia, would receive \$11 billion in revenues and the addition of 8000 new jobs by the time the last C-5B is delivered in 1989 [Ref. 49:p. 50]. Figures for authorizations and appropriations for FY 1984-1986 appear in Table III-2 below.

4. The F-18 Hornet

The Navy's F-18 Hornet fighter-bomber was originally a small, relatively low-cost aircraft developed to complement the \$36 million F-14; however, due to "gold-plating" the plane had gone from \$16 million each to \$32 million [Ref. 50:p. 16]. In 1978 the Navy told the Department of Defense in private that it no longer wanted

TABLE III-2

FUNDING FOR THE C-5 TRANSPORT PLANE
(in millions)

	Reagan Request		Enacted Authorization		Enacted Appropriation	
	No.	Amt.	No.	Amt.	No.	Amt.
FY84	4	1,076	4	1,076	4	1,076
FY85	10	2,099	8	1,782	8	1,682
FY86	16	2,268	16	2,166	16	2,135

Source: Congressional Quarterly Almanac (1983-1985)

the plane. "But partly because of strong congressional support from Massachusetts (the engines are built in Lynn), the program was retained" [Ref. 50:p. 16].

In 1983 the decision still centered around the idea of scrapping the F-18 to save \$2.9 billion [Ref. 50:p. 16], but again \$2.136 billion was appropriated for 84 F-18 fighters [Ref. 46:p. 281]. The plane still was authorized and appropriated for FY 1986. The figures for the F-18 from FY 1984-1986 appear in Table III-3 below.

5. The DOD Research Initiative

Pork barrel is not confined to weapons systems. In 1985 the Pentagon conceived the University Research Initiative ". . . to fund research and training in areas of military interest" [Ref. 51:p. 924]. Almost instantaneously representatives and senators sought to obtain funding for their alma maters or schools in their districts.

TABLE III-3

FUNDING FOR THE F-18 CARRIER FIGHTER
(in millions)

	Reagan Request		Enacted Authorization		Enacted Appropriation	
	No.	Amt.	No.	Amt.	No.	Amt.
FY84	84	2,151	84	2,136	84	2,100
FY85	84	2,686	84	2,626	84	2,501
FY86	84	2,762	84	2,690	84	2,478

Source: Congressional Quarterly Almanac (1983-1985)

Oklahoma State University, for example, will probably be the beneficiary of \$1 million from the new program, courtesy of Representative Wes Watkins (D-Okla.), a 1960 graduate of Oklahoma State and a former assistant director of admissions there. . . . Syracuse University will probably be the beneficiary of a \$12 million grant for computer science, which may or may not be drawn from the new program. Senator Alfonse d'Amato (D-N.Y.) initially sought \$29.5 million for his alma mater from the research initiative, more than the total amount requested by the Reagan Administration for all schools. [Ref. 51:p. 924]

(The \$12 million grant had been reduced from \$29.5 million because of protests from the Association of American Universities and the National Association of State Universities and Land Grant Colleges.)

Not all requests for research funding by congressmen were so direct; the FY 1987 defense appropriations bill included provision for a one million dollar pilot program in advanced semiconductor research to be awarded to a university, as follows:

"... a private nonprofit institution which possesses established expertise in research in advanced semiconductor materials and devices, and which is empowered to grant graduate level degrees." The request inserted by Representative Les AuCoin (D.-Ore.), is intended to benefit the Oregon Graduate Center, just west of Portland, according to AuCoin's staff. But the provision was worded so that other schools may apply and considerable competition may ensue. [Ref. 51:p. 924]

6. The Strategic Defense Initiative (SDI)

Probably the most controversial weapon system in the Reagan Administration's rearmament plan will also be the one most remembered for the implications of pork barrel politics that surround it. Before the dust settles the SDI will cost between \$90 billion and one trillion dollars.

There has been considerable speculation as to the real proponents of the SDI. E.P. Thompson, in his article, "Look Who's Really Behind Star Wars" for Nation [Ref. 52] wrote:

We cannot simply attribute all to the whims of President Reagan. Nations do not normally lay heavy burdens on their taxpayers and inflate the national deficit just to humor a leader. Nor do national security establishments endanger their relations with their allies in pursuit of a strategic hypothesis.

There must be some hidden agenda here and some powerful interests at work. President Reagan did not invent the Strategic Defense Initiative (S.D.I.) out of the air. [Ref. 52:p. 233]

The "powerful interests" at work are primarily key contactors of the defense industry, communities and research institutions who all stand to gain current and future economic benefits from SDI [Ref. 53:p. 20]. But it is the

defense industries that are considered the most desirous of SDI simply because they have the most to gain.

We do not have to speculate on who is behind all this, since they can be identified. Eighty-seven percent of the S.D.I. and antisatellite contracts in fiscal 1983 and 1984 were received by companies. Seven of those ten are among the Pentagon's top twenty private arms contractors. They include the major contractors building offensive weapons: the MX missile (Rockwell, T.R.W., AVCO), The B-1 bomber (Rockwell, AVCO, BOEING, LTV), the Trident missile (Lockheed) and the cruise missile (Boeing, Litton). Rounding out the group are McDonnell Douglas, Hughes Aerospace and Teledyne. Martin Marietta (the contractor for the Pershing 2) came in thirteenth place, after Ford Aerospace and Science Applications International. No doubt the table seating will change as other giants move up, like Grumman and Honeywell, and as new high-tech consortiums are set up. But this is where the thrust comes from. [Ref. 52:pp. 234-236]

For FY 1985 the leading SDI contractors were again among the top Pentagon contractors. Table III-4 gives the actual dollar amounts.

It is generally believed that the defense industries were looking to gather a replacement weapon system for the MX missiles, the B-1 bombers, and Pershing missiles, as their contracts for the systems would run out in the early 1990s [Refs. 52:p. 236; 53:p. 20]. There would be huge industrial capacities available without weapons to build; furthermore, dollar revenues would plummet.

According to financial analyst Alan Benasuli of Drexel Burnham: "SDI will probably take up the slack of regular military spending, which is scheduled to start levelling off in 1988." [Ref. 53:p. 22]

William Hartung, in The Bulletin of Atomic Scientists article, "Star Wars Pork Barrel" [Ref. 53], wrote that the SDI was "political risk insurance" for the nuclear

TABLE III-4

THE TOP 10 SDI CONTRACTORS, FISCAL YEAR 1985

Company	Total awards (\$ millions)
Boeing	\$152.5
TRW	96.5
AVCO	53.4
Lockheed	42.0
Rockwell International	40.8
Hughes Aircraft	27.2
LTV	21.5
Aerojet General	19.4
Litton (Itek subsidiary)	18.4
McDonnell Douglas	16.7

Source: Strategic Defense Initiative Organization, estimates as of September 23, 1985. Figures include only funds obligated during fiscal 1985, not the value of long-term awards like Boeing's five-year, \$289 million contract for the Airborne Optical Adjunct. [Ref. 53:p. 21]

weapons industry if there were to be a halt to the nuclear arms race [Ref. 53:p. 30]. He continued:

If the arms industry had been asked to devise the most profitable alternative to arms control, they couldn't have come up with a better proposal than the Star Wars plan. [Ref. 53:p. 30]

The major nuclear weapons producers were not alone in their quest for SDI funds:

These giants subcontract much work to the minnows of the trade, and to computer and electronics companies, some of whom hope to grow into whales. By 1985 there was a stampede of smaller contractors to the doors of Lieut. Gen. James Abrahamson's Strategic Defense Initiative Organization. An investors' newsletter called S.D.I. "money from heaven," and another commentator likened the excitement among high-tech operators to a "fish-feeding frenzy." [Ref. 52:p. 236]

Beyond the powerful defense industry, other forces were at work to secure dollars in the FY 1984 and FY 1985 authorizations and appropriations for SDI:

- And in 1983 and 1984 . . . 77 percent of the prime contracts for SDI went to states or districts whose representatives or senators sit on the armed services committees and the defense appropriations subcommittees. That is how pork barrel works. [Ref. 52:p. 236]
- SDI funds are going to areas that are traditional military-industry strongholds. Over 95 percent of prime contracts for SDI work in 1983 and 1984 went to just five states: California got 45 percent; Washington, 22 percent; Texas, 13 percent; Alabama, 10 percent; and Massachusetts, 5 percent. [Ref. 53:p. 233]

The Reagan Administration played pork barrel politics from the outset of SDI to ensure support for the program [Ref. 53:p. 30]. The economic benefits to be potentially realized by certain congressional districts can be easily seen in the attractive dollar amounts in the FY 1985-1986 authorizations and appropriations for SDI presented in Table III-5.

One of the criticisms of the Reagan Administration's push for SDI is that the President's Defense Technologies Study Team, gathered to ". . . define the technologies necessary for defending the United States and our allies

TABLE III-5

FUNDING FOR THE STRATEGIC DEFENSE INITIATIVE
(in millions)

	Reagan Request	Enacted Authorization	Enacted Appropriation
FY85	1,777	1,527	1,400
FY86	3,713	2,750	2,750

Source: Congressional Quarterly Almanac (1984-1985)

from ballistic missile attack" [Ref. 53:p. 21], had a composition of members that was one third employees or board members of military corporations which have since received substantial research and development awards for SDI [Ref. 53:pp. 21-22].

Another criticism of the SDI push involves the momentum the weapons system carries with it, primarily attributable to the trillion dollar price tag attached to it. Hartung wrote for The Bulletin of Atomic Scientists [Ref. 53]:

As the size of SDI contracts grows and the production runs of locally manufactured weapons near their close, legislators from these areas will find it harder and harder to vote down SDI funds in the face of contractor (and constituent) pressure. [Ref. 53:p. 23]

In his article for Nation [Ref. 52], Thompson called SDI an "unstoppable juggernaut" [Ref. 52:p. 219].

Perhaps one of the most potentially damaging criticisms of the Reagan Administration advocacy of SDI is

the cry of "pork barrel" for California from the critics of SDI. In 1983 and 1984, 45 percent of the prime contracts in space weapons went to President Reagan's home state [Ref. 52:p. 236]. By mid-FY 1987 almost one half of the \$10.9 billion in contracts secured for SDI had gone to companies and laboratories in California, according to a report by the Federation of American Scientists, an organization that has strongly criticized SDI [Ref. 54:p. 12]. The report was published in April of 1987, and some of the findings are presented in Table III-6.

D. SUMMARY

By no means is the preceding presentation of weapon systems all inclusive of those that have been mired in defense political struggles: some systems, in the end, being deployed and others not. However, the point is simply that the large dollar amounts the Reagan Administration proposed to spend on its rearmament plan provides fertile ground for all sorts of defense political games.

In the following chapter, the trends in defense prime contract awards will be examined, with a special emphasis on the awards made in California, to determine the impact of defense politics during the Reagan Administration.

TABLE III-6

LEADING STATES, CITIES, CORPORATIONS BY SDI CONTRACT AWARDS

LEADING STATES BY SDI CONTRACT AWARDS

California	\$4.9 billion	45.1% of the total awards
New Mexico	1.3	12.4
Massachusetts	1.0	9.0
Alabama	.6	6.1

LEADING CITIES BY SDI CONTRACT AWARDS

Los Angeles, CA	\$2.6 billion	504 contracts
San Francisco, CA	1.9	234
Albuquerque, NM	1.3	
Boston, MA	1.0	
Washington, D.C.	.7	

TOP CORPORATIONS BY SDI CONTRACTS

Lockheed	\$1.000 billion
General Motors	.734
TRW	.567
Dept. of Energy Laboratory, Livermore	.552
McDonnell Douglas	.485
Boeing	.475

\$8 billion total or 73% of the SDI contracts

OTHER CONTRACTORS BY SDI CONTRACTS

Federal Laboratories	\$1.5 billion or 14% of total
Universities	.700 6
Government Agencies	.450 4
Non-profit organizations	\$100 thousand or 1% of total
Foreign firms	100 1

Source: The Monterey Peninsula Herald

IV. TREND ANALYSIS

A. INTRODUCTION

After examining the phenomenon of defense politics, particularly exemplified by the "military-industrial complex," the "congressional-industrial complex," and plain, old pork barrel, in theory and in fact, it now comes time to look at California in particular. To recall, there is a generally held notion that California has been the primary beneficiary of the increased defense spending that has resulted from the Reagan Administration's military buildup. In this chapter, this notion will be challenged on the basis of an analysis of the trends in the award of DOD prime contracts in the United States from FY 1980 through FY 1986. Basically, California has not received an inordinate share of DOD prime contracts since the buildup began; California was the leader in contract awards well before the Reagan Administration initiated its plans, and it has continued as the leader. The remainder of the chapter will be devoted to proffering some alternative explanations, with defense political overtones, that may help to give reason for California's first slot in contract awards.

B. THE BOTTOM LINE

The net value of DOD prime contracts awarded to California made a large percentage jump in FY 1982: a

percentage change of approximately 35.9 percent from \$16,698,825,000 in FY 1981 to \$22,684,515,000 in FY 1982. The net value of prime contracts awarded to California rose by 16.3 percent, 8.1 percent and 2.1 percent in FY 1983, 1984 and 1985, respectively. Not until FY 1986 did the dollar value of the prime contracts awarded to California fall; the net value dropped by 4.7 percent at that time.

It is interesting that the net value of the prime contracts awarded to California would jump so dramatically in FY 1982. Basically, FY 1982 was the first defense budget that was more or less representative of the ideals of the new Administration. The FY 1981 defense budget was already enacted by January of 1981 when President Reagan was inaugurated, and the changes that could be effected were in the form of supplementals. To keep this 35.9 percent figure in perspective, three things should be noted. First, no matter how dramatic the jump may seem, it was not high enough to qualify California as one of the top four states for FY 1982 with the largest percentage increase in awards. The top four states were:

STATE	PERCENT CHANGE	DOLLAR CHANGE (\$000)
Arkansas	140.4	306,810
Idaho	133.8	54,545
Maine	65.5	312,045
Kansas	47.7	468,822

Secondly, it should be pointed out that none of the five states with the top dollar awards were ever included as states with the largest percentage change in awards in reports compiled by the Directorate for Information Operations and Reports (DIOR) [Refs. 55-60]. Finally, it should be noted that the FY 1982 percentage change in contract awards was the only time in this period, FY 1980 through FY 1986, that California was the state with the greatest percentage change of the five states awarded the top dollars in DOD prime contracts.

Whereas California did not receive the largest percentage change in awards, the state did receive the largest dollar value change of any state for FY 1981 through FY 1984:

FY81: \$2,784,296,000 increase in contract awards

FY82: 5,985,690,000 increase in contract awards

FY83: 3,702,645,000 increase in contract awards

FY84: 2,132,581,000 increase in contract awards

These dollar figures, taken out of the context of the relative total state DOD prime contract awards, could lead to the conclusion that in FY 1981 through FY 1984 California did benefit more from the Reagan buildup than any other state. However, it is essential to consider the changes in the context of the immensity of the awards given to California for an adequate comparison; then the changes fall more in line with those for other states.

Table IV-1 presents the net value and percent distribution of DOD prime contracts for the leading five states from FY 1980 through FY 1986. Three cautions should be delineated before any conclusions are drawn from the data presented in Table IV-1; they are:

1. In FY 1984 the DIOR changed the presentation of the report of DOD prime contracts awarded by state over \$10,000 to DOD prime contracts awarded by state over \$25,000. Interestingly enough, no changes in dollar figures occurred.
2. "Prime contract data are not a means of measuring the total volume of defense work performed within a state, as a substantial amount of work may be subcontracted." [Ref. 60:p. 1]
3. "Contract work is not necessarily performed in the state where the contract is awarded. Most manufacturing contracts have been attributed to the contractor's location where the product will be processed and assembled. When contract work has been performed at more than one plant, the contract has been attributed to the location where the largest dollar amount of work was produced. Both construction and service contracts have been attributed to the state where the work is to be performed. Contracts for transportation and communication services in most cases have been attributed to the state where the contractor's home office is located. For purchases from wholesale or other distribution firms, the location is the contractor's business address." [Ref. 60:p. 1]

By far and away, California has consistently been awarded a higher percentage of DOD prime contracts from FY 1980 to FY 1986. Vying for second place have been Texas and New York; but their percentage of the U.S. total has always been less than nine percent each as compared to California's 19 percent or more. Massachusetts, Connecticut, Missouri, Virginia and Florida have generally switched off holding fourth and fifth places.

TABLE IV-1

NET VALUE AND PERCENT DISTRIBUTION OF DOD PRIME CONTRACTS
BY STATE
(amounts in thousands)

YEAR	STATE	AMOUNT	% OF US	% CHANGE	RANK % Δ	PREVIOUS FY % OF US	% CHANGE OF TOTAL AWARDS
1980	CA	13,914,429	20.4	19.2	3	20.6	20.2
	NY	5,678,789	8.3	15.6	4	8.7	
	TEXAS	5,413,352	8.0	27.8	1	7.5	
	CONN	3,879,061	5.7	2.7	5	6.7	
	MASS	3,743,171	5.5	25.5	2	5.3	
1981	CA	16,698,825	19.0	20.0	3	20.4	28.9
	TEXAS	7,503,964	8.6	38.6	1	8.0	
	NY	6,520,511	7.4	14.8	5	7.4	
	MASS	4,604,946	5.2	23.0	2	5.5	
	CONN	4,494,258	5.1	15.9	4	5.7	
1982	CA	22,684,515	21.8	35.9	1	19.0	18.3
	NY	7,776,097	7.5	19.3	4	7.4	
	TEXAS	6,872,304	6.6	-8.4	5	8.6	
	CONN	5,905,036	5.7	31.4	2	5.1	
	MO	5,354,049	5.2	21.4	3	5.0	
1983	CA	26,387,160	22.2	16.3	5	21.8	14.3
	NY	9,634,611	8.1	23.9	2	7.5	
	TEXAS	8,228,879	6.9	19.7	3	6.6	
	VA	7,071,810	6.0	73.2	1	3.9	
	MASS	6,327,505	5.3	19.0	4	5.1	

TABLE IV-1 (CONTINUED)

1984	CA	28,519,741	23.0	8.1	3	22.2	4.4
	NY	9,514,628	7.7	-1.3	5	8.1	
	TEXAS	8,750,329	7.1	6.3	4	6.9	
	MASS	7,028,885	5.7	11.1	2	5.3	
	MO	6,520,208	5.3	15.7	1	4.7	
1985	CA	29,114,566	20.8	2.1	5	23.0	13.0
	TEXAS	10,561,556	7.5	20.7	1	7.1	
	NY	10,032,702	7.2	5.5	4	7.7	
	MASS	7,713,546	5.5	9.7	3	5.7	
	MO	7,612,713	5.4	16.8	2	5.3	
1986	CA	27,737,750	20.4	-4.7	3	20.8	-2.9
	TEXAS	10,940,227	8.0	3.6	4	7.5	
	NY	9,908,384	7.3	-1.2	5	7.2	
	MASS	8,734,860	6.4	13.2	1	5.5	
	FL	5,664,138	4.2	7.5	2	3.8	

Sources: DOD DIOR Prime Contract Awards by Region and State

Fiscal Years 1978, 1979, 1980
 Fiscal Years 1979, 1980, 1981
 Fiscal Years 1980, 1981, 1982
 Fiscal Years 1982, 1983, 1984
 Fiscal Years 1983, 1984, 1985
 Fiscal Years 1984, 1985, 1986

C. CALIFORNIA AND THE PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS BY MAJOR PROCUREMENT PROGRAM

Given that California has been awarded the highest net value and percentage of total DOD prime contracts from FY 1980 through FY 1986, it follows that the state would consistently be one of the top five states receiving the highest dollar value DOD prime contracts by major procurement program; Tables IV-2 through IV-7 indicate that this is, in fact, the case. (Information on FY 1983 is unavailable.) Before careful scrutiny of the tables, it is important to consider the additional information that DIOR provides for them:

Some special characteristics of the data on prime contract awards by procurement program category should be noted:

1. The Electronics and Communication Equipment category includes all electronics procured separately under prime contract. However, in the case of Missiles and Space Systems or Aircraft Engines and Related Spares, electronics work is often a basic part of the assembly prime contract; therefore, awards for electronics are included in the statistics for these categories.

2. Contracts for all other types of equipment and parts for repair, maintenance, overhaul, modification, or other services, which can be identified with a specific category, are assigned to that category. As an example, the installation or inspection of equipment at ballistic missile sites is recorded as missile work in the state where the site is located. However, the contract for manufacturing such equipment is reported according to the location of the manufacturer's plant. Therefore, aircraft, missile, or other program contracts may be reported in states where there are no weapon assembly plants but where bases, laboratories, or suppliers of instruments, parts, or support equipment may be located.

3. The dollar value shown for each category includes the RDT&E work associated with it. RDT&E coverage includes research, exploratory development, advanced development, engineering development, operational systems development,

NET VALUE OF PRIME CONTRACT AWARDS DISTRIBUTED BY STATE WITHIN
PROCUREMENT PROGRAMS: FY 1980
(FIVE LEADING STATES)

PROCUREMENT PROGRAMS	VALUE	RANK AND PERCENT OF U.S.										PCT OF U.S. 1-5
		1ST		2ND		3RD		4TH		5TH		
		STATE PCT		STATE PCT		STATE PCT		STATE PCT		STATE PCT		
		STATE	PCT	STATE	PCT	STATE	PCT	STATE	PCT	STATE	PCT	
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	\$7,979,383	MO	26.9	TEXAS	21.6	NY	18.3	CALIF	11.8	CONN	7.4	86.0
AIRCRAFT ENGINES AND RELATED SPARES	4,031,306	CONN	52.7	MASS	21.7	OHIO	8.0	IND	6.0	FLA	5.2	93.6
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	3,131,023	TEXAS	24.0	CALIF	15.7	NY	12.8	CONN	5.1	NO	4.0	86.6
MISSILE AND SPACE SYSTEMS	9,321,025	CALIF	44.2	MASS	12.9	WASH	8.3	MO	4.2	NJ	3.2	72.8
SHIPS	6,232,565	VA	27.7	CALIF	15.5	CONN	8.5	NV	6.7	PA	6.3	64.7
COMBAT VEHICLES	2,229,551	MICH	48.3	CALIF	23.6	IND	8.2	OHIO	4.5	MO	3.9	88.5
NON-COMBAT VEHICLES	544,036	IND	28.5	OHIO	12.2	MICH	11.1	PA	5.2	MD	4.4	61.4
WEAPONS	1,336,438	CALIF	25.2	PA	17.4	TEXAS	10.8	VT	6.8	NY	6.1	66.3
AMMUNITION	2,031,453	MINN	14.3	CALIF	13.5	OHIO	11.8	PA	6.6	VA	6.6	52.8
ELECTRONICS AND COMMUNICATION EQUIPMENT	618,913	CALIF	24.6	NY	12.6	MD	6.6	MASS	6.1	WASH	5.2	55.1
PETROLEUM	4,092,358	CALIF	27.1	TEXAS	20.4	LA	4.9	IND	4.4	PA	4.0	60.8
OTHER FUELS AND LUBRICANTS	103,024	PA	54.7	KY	12.9	W VA	7.7	CALIF	4.1	IND	3.0	82.4
SEP PROCURED CONTAINERS AND HANDLING EQUIP	6,084	NC	31.2	MASS	15.9	IND	11.9	CALIF	10.8	OHIO	10.0	79.8
TEXTILES, CLOTHING AND EQUIPAGE	810,989	NC	10.3	GA	8.3	ALA	8.2	TENN	7.3	SC	7.3	41.4
MILITARY BUILDING SUPPLIES	75,742	NV	17.6	CONN	11.3	OREG	7.2	CALIF	6.9	WASH	6.8	55.8
SUBSISTENCE	1,351,878	CALIF	18.6	TEXAS	10.3	ILL	8.3	NY	5.4	FLA	5.4	48.0
TRANSPORTATION EQUIPMENT	8,241	VA	65.0	SC	16.6	GA	10.7	ILL	2.4	WASH	2.2	46.9
PRODUCTION EQUIPMENT	206,605	MASS	40.9	CALIF	14.6	OHIO	9.6	IND	6.5	ILL	5.9	76.6
CONSTRUCTION	4,307,432	CALIF	14.5	WASH	6.2	VA	6.2	GA	5.6	MISS	5.4	51.9
CONSTRUCTION EQUIPMENT	113,490	IND	21.3	ILL	14.0	IOWA	11.4	WIS	9.5	NY	8.4	64.6
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	274,482	NY	14.4	NJ	11.5	PA	10.9	ILL	6.1	WIS	5.5	48.4
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	80,349	NV	33.4	MASS	21.7	CALIF	11.0	ILL	7.4	VA	5.9	79.4
MATERIALS HANDLING EQUIPMENT	95,442	ILL	34.3	HIGH	9.1	OHIO	6.9	IND	6.5	SC	6.0	62.8
ALL OTHER SUPPLIES AND EQUIPMENT	2,607,845	CALIF	15.6	NY	8.2	PA	7.0	MASS	6.5	VA	5.6	42.9
SERVICES	6,479,922	CALIF	17.4	NY	16.1	VA	6.5	TEXAS	5.5	FLA	5.0	50.5

TABLE IV-3

PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER \$10,000 FOR THE TOP FIVE STATES IN EACH OF THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1981
(amounts in thousands)

PROCUREMENT PROGRAMS	VALUE	RANK AND PERCENT OF U.S.								PCT OF U.S. 1-5		
		1ST		2ND		3RD		4TH			5TH	
		STATE PCT		STATE PCT		STATE PCT		STATE PCT			STATE PCT	
		STATE PCT	STATE PCT	STATE PCT	STATE PCT	STATE PCT	STATE PCT	STATE PCT	STATE PCT		STATE PCT	STATE PCT
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	214,955	MO 27.9	TEXAS 19.0	NY 16.6	CALIF 11.1	CONN 8.4					83.0	
AIRCRAFT ENGINES AND RELATED SPARES	5,086,676	CONN 37.9	MASS 22.5	FLA 17.3	OHIO 8.6	IND 5.8					91.9	
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	3,719,262	CALIF 20.9	NY 13.9	TEXAS 9.2	MO 5.4	CONN 4.6					54.0	
MISSILE AND SPACE SYSTEMS	1,473,646	CALIF 38.1	MASS 14.5	WASH 8.9	COLO 4.9	MO 4.0					70.4	
SHIPS	7,766,205	VA 18.8	CALIF 13.3	CONN 11.0	MASS 9.7	NY 8.5					61.3	
COMBAT VEHICLES	3,418,870	MICH 27.6	CALIF 23.1	OHIO 21.1	CONN 6.8	IND 6.3					84.9	
NON-COMBAT VEHICLES	902,736	IND 37.2	WIS 11.0	OHIO 10.6	MICH 10.1	DA 5.0					73.9	
WEAPONS	1,683,197	CALIF 42.9	FLA 7.3	PA 7.3	MINN 6.9	NY 5.1					69.5	
AMMUNITION	2,526,551	CALIF 14.9	MINN 11.3	PA 8.0	VA 6.6	MASS 5.8					46.6	
ELECTRONICS AND COMMUNICATION EQUIPMENT	2,871,317	CALIF 25.6	NY 10.8	MD 7.7	TEXAS 6.4						56.3	
PETROLEUM	9,458,599	TEXAS 29.6	LA 26.7	CALIF 12.9	HAWAII 2.6	PA 2.6					73.8	
OTHER FUELS AND LUBRICANTS	97,958	PA 47.6	KY 14.8	WVA 13.7	CALIF 4.3	TENN 4.3					84.7	
SEP PROCURED CONTAINERS AND HANDLING EQUIP	9,622	IND 40.9	MO 17.4	MASS 9.1	CALIF 5.3	PA 3.1					94.9	
TEXTILES, CLOTHING AND EQUIPAGE	856,734	NC 12.4	TENN 9.6	ALA 9.4	SC 8.0	GA 7.9					47.3	
MILITARY BUILDING SUPPLIES	83,970	NY 15.2	CONN 14.1	ALA 11.5	CALIF 9.3	OKLA 7.9					58.0	
SUBSISTENCE	1,622,678	CALIF 18.1	TEXAS 12.2	ILL 8.2	SC 5.9	NY 5.0					49.4	
TRANSPORTATION EQUIPMENT	8,688	VA 75.6	ILL 14.3	WIS 4.6	OHIO 2.0	SC 1.9					97.4	
PRODUCTION EQUIPMENT	193,142	CALIF 20.3	OHIO 16.4	MASS 12.6	IL 6.0	PA 4.7					60.0	
CONSTRUCTION	4,958,690	CALIF 13.8	MASS 6.2	WASH 6.1	IL 5.2	TEXAS 5.0					36.3	
CONSTRUCTION EQUIPMENT	81,075	NY 27.0	ILL 20.4	MICH 10.6	PA 6.3	CALIF 5.5					69.8	
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	349,383	NY 16.2	NJ 11.3	PA 9.5	WIS 6.4	ILL 5.7					49.1	
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	118,119	NY 30.3	MASS 27.0	CALIF 11.9	VA 4.6	ILL 4.1					77.9	
MATERIALS HANDLING EQUIPMENT	101,229	IL 16.9	MO 12.5	MICH 10.4	SC 7.3	CALIF 6.6					53.7	
ALL OTHER SUPPLIES AND EQUIPMENT	3,304,457	CALIF 15.6	NY 8.4	TEXAS 7.1	PA 6.3	VA 5.3					42.7	
SERVICES	7,054,146	CALIF 18.6	NY 16.1	VA 8.0	FLA 5.0	TEXAS 4.8					52.5	

Source: [Ref. 56:p. 69]

TABLE IV-4

PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER \$10,000 FOR THE TOP FIVE STATES IN EACH OF THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1982
(amounts in thousands)

PROCUREMENT PROGRAMS	VALUE	RANK AND PERCENT OF U.S.								PCT OF U.S. 1-5
		1ST	2ND		3RD	4TH		5TH		
			STATE PCT	STATE PCT		STATE PCT	STATE PCT	STATE PCT	STATE PCT	
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	\$14,185,106	MO 25.2	CALIF 21.3	N Y 13.5	TEXAS 12.0	CONN 8.6	80.6			
AIRCRAFT ENGINES AND RELATED SPARES	5,336,522	CONN 31.0	FLA 23.1	MASS 18.7	OHIO 14.5	IND 4.9	92.2			
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	3,804,737	CALIF 21.3	N Y 12.1	TEXAS 9.6	FLA 6.6	CONN 5.9	55.5			
MISSILE AND SPACE SYSTEMS	14,271,254	CALIF 41.8	MASS 12.7	MD 4.8	COLO 4.4	FLA 4.4	68.1			
SHIPS	10,030,744	CONN 18.4	CALIF 13.2	VA 11.7	N Y 10.4	MISS 8.0	61.7			
COMBAT VEHICLES	3,446,382	CALIF 25.0	OHIO 22.2	MICH 19.4	IND 10.5	CONN 9.8	86.9			
NON-COMBAT VEHICLES	1,476,246	IND 33.9	WIS 15.8	MICH 11.5	OHIO 9.9	MO 6.4	77.5			
WEAPONS	2,503,848	CALIF 55.5	FLA 7.5	VT 5.9	TEXAS 5.7	N Y 4.8	79.4			
AMMUNITION	3,657,062	CALIF 17.4	MINN 13.3	PA 8.2	OHIO 7.1	TENN 6.0	52.0			
ELECTRONICS AND COMMUNICATION EQUIPMENT	16,125,089	CALIF 24.8	N Y 11.3	MASS 7.5	MD 7.4	WASH 6.3	57.3			
PETROLEUM	7,066,848	TEXAS 24.6	CALIF 19.0	LA 13.9	HAWAI 3.8	PA 3.7	65.0			
OTHER FUELS AND LUBRICANTS	62,522	PA 40.4	W VA 14.4	KY 10.5	IND 6.2	CALIF 4.4	75.9			
SEP PROCURED CONTAINERS AND HANDLING EQUIP	42,836	MICH 26.6	DEL 20.6	CALIF 15.5	IND 12.4	ARIZ 7.2	82.3			
TEXTILES, CLOTHING AND EQUIPAGE	975,248	ALA 10.4	N C 10.2	TENN 9.0	MISS 8.9	N Y 7.6	46.1			
MILITARY BUILDING SUPPLIES	63,961	VA 19.9	ARIZ 10.8	CALIF 9.7	WASH 7.9	OREG 6.7	55.0			
SUBSISTENCE	1,550,980	CALIF 16.8	TEXAS 12.5	ILL 8.1	VA 5.6	FLA 4.6	47.6			
TRANSPORTATION EQUIPMENT	14,700	ILL 94.5	OKLA 2.5	CALIF 1.0	MO .6	ARK .4	99.0			
PRODUCTION EQUIPMENT	225,960	MASS 18.4	IND 12.2	CALIF 9.3	MINN 8.1	WIS 6.1	54.1			
CONSTRUCTION	5,312,375	CALIF 14.1	TEXAS 6.7	VA 5.4	MISS 5.2	GA 4.8	36.2			
CONSTRUCTION EQUIPMENT	143,656	ILL 19.9	MICH 16.7	N Y 11.4	TEXAS 9.4	IOWA 8.8	66.2			
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	389,886	N Y 16.6	N J 13.0	PA 10.5	ILL 5.5	CALIF 5.5	51.1			
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	153,908	MASS 33.1	N Y 23.6	CALIF 12.6	ILL 7.8	VA 3.5	80.6			
MATERIALS HANDLING EQUIPMENT	192,618	MICH 13.0	ILL 12.5	N Y 10.7	IND 8.5	MO 8.1	52.8			
ALL OTHER SUPPLIES AND EQUIPMENT	3,981,688	CALIF 15.1	VA 7.9	N Y 7.7	FLA 5.3	PA 4.9	40.9			
SERVICES	8,843,613	CALIF 17.0	N Y 14.7	VA 10.6	N J 5.2	FLA 4.6	52.1			

TABLE IV-5

PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER \$25,000 FOR THE TOP FIVE STATES IN EACH OF THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1984
(amounts in thousands)

PROCUREMENT PROGRAMS	VALUE	RANK AND PERCENT OF U.S.					PCT OF U.S. 1-5
		1ST	2ND	3RD	4TH	5TH	
		STATE PCT	STATE PCT	STATE PCT	STATE PCT	STATE PCT	
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	\$ 21,321,289	CALIF 31.6	MO 20.5	TEXAS 13.4	N Y 11.8	GA 8.3	85.6
AIRCRAFT ENGINES AND RELATED SPARES	5,495,756	CONN 30.8	MASS 23.8	OHIO 16.3	FLA 9.0	INO 8.1	88.0
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	4,979,128	CALIF 21.5	CONN 10.3	N Y 10.2	KANS 7.8	GA 7.2	57.0
MISSILE AND SPACE SYSTEMS	18,384,598	CALIF 38.6	MASS 14.8	WASH 5.9	MO 4.7	MO 4.7	68.7
SHIPS	9,799,913	MISS 17.2	CONN 15.4	N Y 12.1	CALIF 11.1	VA 10.3	66.1
COMBAT VEHICLES	3,451,245	MICH 35.6	CALIF 20.9	CONN 13.7	INO 9.9	PA 5.5	85.6
NON-COMBAT VEHICLES	1,858,081	INO 34.9	MICH 19.7	WIS 15.3	OHIO 10.8	MO 2.8	83.3
WEAPONS	2,508,923	CALIF 52.5	TEXAS 7.5	VT 4.6	MASS 4.6	FLA 4.5	73.7
AMMUNITION	4,005,244	CALIF 16.8	MINN 15.1	PA 7.7	MO 7.0	TENN 6.1	52.7
ELECTRONICS AND COMMUNICATION EQUIPMENT	21,387,718	CALIF 23.0	N Y 13.3	MO 8.3	N J 6.1	MASS 5.9	56.6
PETROLEUM	5,868,855	TEXAS 35.5	CALIF 18.5	LA 7.7	N Y 3.2	KY 2.9	67.8
OTHER FUELS AND LUBRICANTS	109,139	PA 36.9	KY 15.5	ALASK 12.0	UTAH 8.8	W VA 6.2	79.4
SEP PROCURED CONTAINERS AND HANDLING EQUIP	15,497	INO 33.7	TEXAS 19.7	OHIO 17.9	MASS 11.4	CALIF 8.0	90.7
TEXTILES, CLOTHING AND EQUIPAGE	1,034,703	R I 13.0	TENN 12.6	N Y 9.9	ALA 6.8	N C 6.0	48.3
MILITARY BUILDING SUPPLIES	153,461	VA 45.1	ALA 16.1	OKLA 12.0	OREG 4.7	OHIO 3.9	81.8
SUBSISTENCE	1,111,617	CALIF 15.2	TEXAS 12.3	ILL 7.6	N Y 5.0	FLA 4.5	44.6
TRANSPORTATION EQUIPMENT	1,738	ILL 34.9	MINN 29.5	WIS 14.4	MO 14.0	OHIO 3.1	95.9
PRODUCTION EQUIPMENT	299,905	CALIF 17.9	MASS 17.7	OHIO 12.5	PA 6.2	TEXAS 5.0	59.3
CONSTRUCTION	6,624,106	CALIF 15.2	TEXAS 7.4	LA 4.7	FLA 4.7	VA 4.7	36.7
CONSTRUCTION EQUIPMENT	251,944	ILL 50.8	INO 16.7	IOWA 8.5	MICH 5.0	N C 3.7	84.7
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	440,902	N Y 14.8	PA 14.4	N J 12.7	WIS 6.9	CALIF 6.5	55.3
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	167,113	ILL 22.6	N Y 19.9	VA 14.5	CALIF 13.7	MASS 10.0	80.7
MATERIALS HANDLING EQUIPMENT	156,795	ILL 34.7	MICH 14.3	OHIO 10.1	UTAH 6.6	N Y 5.9	71.6
ALL OTHER SUPPLIES AND EQUIPMENT	4,104,938	CALIF 13.7	VA 8.3	FLA 7.1	N Y 6.5	PA 6.1	41.7
SERVICES	10,460,369	CALIF 16.7	N Y 11.9	VA 10.3	MASS 6.7	N J 4.8	50.4

TABLE IV-6

PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER \$25,000 FOR THE TOP FIVE STATES IN EACH OF THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1985
(amounts in thousands)

P R O C U R E M E N T P R O G R A M	V A L U E	R A N K A N D P E R C E N T O F U . S .										- P C T O F -		
		1 S T - 2 N D - 3 R D - 4 T H - 5 T H - U . S .										- P C T -		
		S T A T E	P C T	S T A T E	P C T	S T A T E	P C T	S T A T E	P C T	S T A T E	P C T	S T A T E	P C T	U . S .
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	\$ 24,663,677	CALIF	29.2	MO	20.9	TEXAS	14.7	N Y	11.4	GA	9.2			85.4
AIRCRAFT ENGINES AND RELATED SPARES	8,170,218	OHIO	32.0	CONN	20.1	MASS	18.7	FLA	11.3	IND	8.4			90.5
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	5,614,781	CALIF	17.9	CONN	12.2	N Y	12.1	FLA	7.5	TEXAS	6.2			55.9
MISSILE AND SPACE SYSTEMS	20,476,684	CALIF	37.5	MASS	15.1	WASH	5.6	MO	5.1	TEXAS	4.8			68.1
SHIPS	10,912,835	VA	15.5	CONN	12.7	LA	12.0	N Y	9.2	PA	8.5			57.9
COMBAT VEHICLES	3,451,470	MICH	39.4	CONN	14.7	CALIF	14.0	IND	11.1	OHIO	8.0			87.2
NON-COMBAT VEHICLES	2,143,332	IND	35.7	MICH	23.8	WIS	20.9	OHIO	4.0	ILL	1.9			86.3
WEAPONS	2,763,321	CALIF	50.1	TEXAS	23.4	MINN	5.6	MASS	5.4	OHIO	4.5			72.0
AMMUNITION	4,736,556	MINN	18.8	CALIF	11.6	FLA	7.8	PA	9.7	IND	5.0			49.9
ELECTRONICS AND COMMUNICATION EQUIPMENT	23,180,019	CALIF	21.7	N Y	13.0	N J	7.5	MO	7.3	VA	7.1			56.6
PETROLEUM	5,703,972	TEXAS	39.3	CALIF	17.5	LA	5.0	MISS	3.9	DEL	3.1			68.8
OTHER FUELS AND LUBRICANTS	130,611	KY	26.6	PA	26.5	ALASK	11.8	W VA	6.7	UTAH	6.1			77.7
SEP PROCURED CONTAINERS AND HANDLING EQUIP	9,114	OHIO	21.4	PA	13.2	CALIF	13.2	ALA	12.9	MINN	8.0			68.7
TEXTILES, CLOTHING AND EQUIPAGE	1,023,344	ALA	10.6	N C	8.3	MISS	6.1	N Y	6.1	TENN	5.8			36.9
MILITARY BUILDING SUPPLIES	1,142,724	VA	50.3	ALA	6.7	CALIF	6.0	DLKA	5.8	OREG	3.3			72.1
SUBSISTENCE	1,021,909	CALIF	15.6	TEXAS	12.6	ILL	10.3	N Y	6.9	VA	3.9			49.3
TRANSPORTATION EQUIPMENT	3,795	ILL	38.4	GA	24.5	IND	15.9	PA	9.1	OHIO	7.0			94.9
PRODUCTION EQUIPMENT	324,838	MASS	24.3	OHIO	13.9	CALIF	9.9	ILL	6.0	WIS	5.0			59.1
CONSTRUCTION	7,788,669	CALIF	12.6	TEXAS	7.6	GA	5.5	VA	4.7	HAWAI	4.0			34.4
CONSTRUCTION EQUIPMENT	157,536	VA	22.4	IOWA	18.1	ILL	14.6	IND	13.3	N C	7.4			75.8
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	451,021	N J	12.6	N Y	11.8	PA	11.4	OHIO	6.4	MO	5.4			47.6
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	112,673	N Y	26.8	ARIZ	16.9	CALIF	13.2	VA	9.1	TEXAS	7.7			73.7
MATERIALS HANDLING EQUIPMENT	204,609	ILL	18.9	PA	12.9	MICH	9.4	ALA	7.6	OKLA	7.2			55.0
ALL OTHER SUPPLIES AND EQUIPMENT	5,659,518	WASH	15.7	CALIF	11.3	MO	17.5	VA	6.2	FLA	6.0			46.7
SERVICES	11,370,118	CALIF	16.3	N Y	11.3	VA	11.1	MASS	8.0	MD	5.4			52.1

Source: [Ref. 59:p. 69]

TABLE IV-7

PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER \$25,000 FOR THE TOP
FIVE STATES IN EACH OF THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1986
(amounts in thousands)

P R O C U R E M E N T P R O G R A M	V A L U E	R A N K A N D P E R C E N T O F U. S.										- P C T O F	
		1ST	2ND	3RD	4TH	5TH	STATE	PCT	STATE	PCT	STATE	PCT	U. S.
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	\$ 23,247,087	CALIF 25.0	TEXAS 19.0	MO 15.7	N Y 12.0	GA 9.9	GA	12.0	IND 8.6	81.6			
AIRCRAFT ENGINES AND RELATED SPARES	7,370,372	OHIO 36.4	FLA 16.4	MASS 15.2	CONN 11.6	IND 8.6	IND	11.6	TEXAS 8.6	88.2			
AIRCRAFT EQUIPMENT AND SUPPLIES	4,683,709	CALIF 20.5	N Y 11.7	CONN 11.2	FLA 6.2	TEXAS 6.0	TEXAS	6.2	TEXAS 6.0	55.6			
MISSILE AND SPACE SYSTEMS	21,510,036	CALIF 34.3	MASS 17.5	TEXAS 6.1	ARIZ 5.6	TEXAS 5.0	TEXAS	5.6	TEXAS 5.0	68.5			
SHIPS	9,685,816	CONN 21.5	MISS 12.1	VA 10.2	N Y 8.7	CALIF 7.6	CALIF	8.7	CALIF 7.6	60.1			
COMBAT VEHICLES	3,686,804	MICH 33.4	CALIF 16.7	CONN 11.2	IND 9.6	PA 9.2	PA	9.6	PA 9.2	80.1			
NON-COMBAT VEHICLES	1,816,278	IND 32.3	OHIO 22.3	WIS 14.0	MICH 8.2	PA 3.8	PA	8.2	PA 3.8	80.6			
WEAPONS	2,559,978	CALIF 42.2	TEXAS 8.1	FLA 6.9	CONN 4.0	OHIO 4.0	OHIO	4.0	OHIO 4.0	65.2			
AMMUNITION	4,539,214	MINN 20.2	CALIF 16.3	FLA 7.7	TENN 7.0	PA 7.0	PA	7.0	PA 7.0	58.2			
ELECTRONICS AND COMMUNICATION EQUIPMENT	21,092,756	CALIF 19.9	N Y 13.0	MD 8.7	MASS 7.4	VA 7.3	VA	7.4	VA 7.3	56.3			
PETROLEUM	6,857,323	CALIF 27.9	TEXAS 27.7	LA 7.3	PA 3.4	OKLA 2.9	OKLA	3.4	OKLA 2.9	69.2			
OTHER FUELS AND LUBRICANTS	130,700	PA 22.4	VA 17.4	KY 14.6	ALASKA 10.0	W VA 9.1	W VA	10.0	W VA 9.1	73.5			
SEP PROCURED CONTAINERS AND HANDLING EQUIP	20,915	N C 50.4	PA 21.8	CALIF 8.5	N Y 4.9	OHIO 2.7	OHIO	4.9	OHIO 2.7	88.3			
TEXTILES, CLOTHING AND EQUIPAGE	1,035,452	ALA 12.3	TENN 10.2	N C 8.6	MISS 8.6	N Y 8.3	N Y	8.6	N Y 8.3	48.0			
MILITARY BUILDING SUPPLIES	86,274	PA 17.7	VA 17.6	OKLA 8.9	OREG 7.5	WASH 5.7	WASH	7.5	WASH 5.7	57.4			
SUBSISTENCE	1,257,949	CALIF 14.5	TEXAS 14.2	ILL 10.4	N Y 5.2	VA 4.7	VA	5.2	VA 4.7	49.0			
TRANSPORTATION EQUIPMENT	3,068	ILL 89.4	GA 8.2	OREG 2.4	PA 7.8	N Y 6.0	N Y	7.8	N Y 6.0	100.0			
PRODUCTION EQUIPMENT	285,937	OHIO 18.5	CALIF 10.7	PA 6.5	VA 5.0	FLA 4.3	FLA	5.0	FLA 4.3	36.5			
CONSTRUCTION	7,536,411	CALIF 14.4	GA 6.5	TEXAS 6.3	VA 5.0	MINN 2.1	MINN	5.0	MINN 2.1	88.6			
CONSTRUCTION EQUIPMENT	153,384	ILL 43.5	VA 22.4	IOWA 17.4	WIS 3.2			3.2					
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	555,434	N Y 14.5	PA 11.6	N J 10.1	MO 6.2	OHIO 6.0	OHIO	6.2	OHIO 6.0	48.4			
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	111,805	CALIF 27.2	N Y 20.0	MASS 16.0	ILL 15.1	MINN 2.3	MINN	15.1	MINN 2.3	87.6			
MATERIALS HANDLING EQUIPMENT	133,919	VA 17.1	MICH 14.9	ILL 8.7	CALIF 8.3	KY 6.9	KY	8.3	KY 6.9	59.4			
ALL OTHER SUPPLIES AND EQUIPMENT	4,951,405	CALIF 13.5	FLA 16.4	ILL 6.7	VA 8.3	PA 6.1	PA	8.3	PA 6.1	39.5			
SERVICES	12,872,266	CALIF 15.9	VA 11.7	N Y 11.3	MASS 8.2	MD 5.3	MD	8.2	MD 5.3	52.4			

Source: [Ref. 60:p. 69]

and management and support. Full definitions for each of these categories are provided in Federal Acquisition Regulation 35.001.

4. Figures in these tables may not add up due to rounding. [Ref. 60:p. 1]

The findings of Tables IV-2 through IV-7 are summarized in Table IV-8 and as follows:

- In FY 1980, California was number one in eight of 25 procurement categories and in the top five of 18 of the 25 categories. Table IV-2.
- In FY 1981, California was number one in 10 of 25 procurement categories and in the top five of 20 of the 25 categories. Table IV-3.
- In FY 1982, California was number one in 10 of 25 procurement categories and in the top five of 20 of the 25 categories. Table IV-4.
- In FY 1984, California was number one in 11 of 25 procurement categories and in the top five of 17 of the 25 categories. Table IV-5.
- In FY 1985, California was number one in eight of 25 procurement categories and in the top five of 17 of the 25 categories. Table IV-6.
- In FY 1986, California was number one in 11 of 25 procurement categories and in the top five of 17 of the 25 categories. Table IV-7.

Obviously, because California has enjoyed such large shares of the total major procurement program prime contract awards--with the exception of the Aircraft Engines and Related Spares, Non-Combat Vehicles, and Textiles, Clothing and Equipage programs, where it has never been among the top five states--it is difficult to discern any trends other than consistently high net value awards in almost every procurement category. It is interesting to note, however, that California would appear to have had the "lion's share"

TABLE IV-8

CALIFORNIA AS THE TOP STATE IN MAJOR PROCUREMENT PROGRAMS:
FY 1980-1986

	Fiscal Year					
	80	81	82	84	85	86
airframes and related assemblies				x	x	x
other a/c equipment and supplies		x	x	x	x	x
missile and space systems	x	x	x	x	x	x
combat vehicles			x			
weapons	x	x	x	x	x	x
ammunition		x	x	x		
electronics and communications equip.	x	x	x	x	x	x
petroleum	x					x
subsistence	x	x	x	x	x	x
production equipment		x		x		
construction	x	x	x	x	x	x
photographic equipment and supplies						x
all other supplies and equipment	x	x	x	x		x
services	x	x	x	x	x	x

Sources: DOD DIOR Prime Contract Awards by Region and State: Fiscal Years 1978, 1979, 1980; Fiscal Years 1979, 1980, 1981; Fiscal Years 1980, 1981, 1982; Fiscal Years 1982, 1983, 1984; Fiscal Years 1983, 1984, 1985; Fiscal Years 1984, 1985, 1986

of the Missile and Space Systems prime contracts throughout this time frame. In FY 1980, California was awarded 44.2 percent of the total U.S. value of these contract awards, as compared to the state's closest rival, Massachusetts, which had 12.9 percent. This percentage fell off somewhat after FY 1980, but in FY 1986, California was still awarded 34.3 percent of the total net value of prime Missile and Space Systems contracts; the state's closest rival, again, being Massachusetts with 17.5 percent of the awards.

The specific net dollar values of these DOD prime contract awards by major procurement program distributed in California is shown in Tables IV-9 and IV-10.

D. CALIFORNIA AND THE TOP DOD PRIME CONTRACTORS

One question that immediately comes to mind, while examining the information on DOD prime contract awards, is simply whether the larger net value and percentage of total contracts is awarded to California because it may happen to be the location of the major DOD prime contractors. Table IV-11 presents the top five contractors receiving the largest dollar volume of prime contract awards in the United States from FY 1982 through FY 1986. Table IV-12 presents the top five contractors receiving the largest dollar volume of prime contract awards in California for the same period. Not all corporate or home offices of the contractors presented are located in California, but the work in the

TABLE IV-9

NET VALUE AND PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER
\$10,000 FOR THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1980-1982
(amounts in thousands)

PROCUREMENT PROGRAM	FISCAL YEAR 1980		FISCAL YEAR 1981		FISCAL YEAR 1982	
	VALUE	PERCENT OF U.S.	VALUE	PERCENT OF U.S.	VALUE	PERCENT OF U.S.
TOTAL	\$ 13,914,429 -----	20.4 -----	\$ 16,698,825 -----	19.0 -----	\$ 22,684,515 -----	88.0 -----
AIRFRAMES AND RELATED ASSEMBLIES AND SPARES	937,885	11.8	1,132,222	11.1	3,024,645	21.3
AIRCRAFT ENGINES AND RELATED SPARES	30,518	.8	63,360	1.2	76,928	1.4
OTHER AIRCRAFT EQUIPMENT AND SUPPLIES	491,395	15.7	778,980	20.9	809,171	21.3
MISSILE AND SPACE SYSTEMS	4,116,092	44.2	4,375,886	38.1	5,971,487	41.8
SHIPS	967,891	15.5	1,030,074	13.3	1,322,224	13.2
COMBAT VEHICLES	525,490	23.6	791,429	23.1	860,425	25.0
NON-COMBAT VEHICLES	11,732	2.2	15,751	1.7	30,119	2.0
WEAPONS	336,249	25.2	722,823	42.9	1,389,300	55.5
AMMUNITION	273,536	13.5	346,650	14.9	635,300	17.4
ELECTRONICS AND COMMUNICATION EQUIPMENT	2,608,381	24.6	3,300,043	25.6	3,994,531	24.8
PETROLEUM	1,107,479	27.1	1,223,586	12.9	1,341,085	19.0
OTHER FUELS AND LUBRICANTS	4,199	4.1	4,253	4.3	2,724	4.4
SEPARATELY PROCURED CONTAINERS AND HANDLING EQUIPMENT	6,656	10.8	514	5.3	6,650	15.5
TEXTILES, CLOTHING AND EQUIPAGE	25,412	3.1	19,424	2.3	22,274	2.3
MILITARY BUILDING SUPPLIES	5,252	6.9	7,825	9.3	6,205	9.7
SUBSISTENCE	251,176	18.6	292,923	18.1	260,167	16.8
TRANSPORTATION EQUIPMENT	138	1.7	59	.7	151	1.0
PRODUCTION EQUIPMENT	30,233	14.6	39,305	20.3	20,966	9.3
CONSTRUCTION	626,311	14.5	685,640	13.8	749,532	14.1
CONSTRUCTION EQUIPMENT	2,713	2.4	4,479	5.5	3,519	2.4
MEDICAL AND DENTAL SUPPLIES AND EQUIPMENT	12,568	4.6	17,647	5.1	21,428	5.5
PHOTOGRAPHIC EQUIPMENT AND SUPPLIES	8,817	11.0	14,105	11.9	19,411	12.6
MATERIALS HANDLING EQUIPMENT	3,576	3.7	6,673	6.6	10,460	5.4
ALL OTHER SUPPLIES AND EQUIPMENT	405,712	15.6	516,240	15.6	600,647	15.1
SERVICES	1,130,018	17.4	1,308,934	18.6	1,505,166	17.0

TABLE IV-10

NET VALUE AND PERCENT DISTRIBUTION OF DOD PRIME CONTRACT AWARDS OVER
\$25,000 FOR THE 25 MAJOR PROCUREMENT PROGRAMS: FY 1983-1986
(amounts in thousands)

PROCUREMENT PROGRAM	FISCAL YEAR 1986		FISCAL YEAR 1985		FISCAL YEAR 1984		FISCAL YEAR 1983	
	VALUE	PERCENT OF U.S.	\$VALUE	PERCENT OF U.S.	\$VALUE	PERCENT OF U.S.	\$VALUE	PERCENT OF U.S.
TOTAL	27,737,750	20.4	\$29,114,566	20.8	\$28,519,741	23.0	\$26,387,160	22.2
AIRFRAMES AND SPARES	5,822,895	25.0	7,196,303	29.2	6,731,833	31.6	5,312,625	28.6
AIRCRAFT ENGINES AND SPARES	164,858	2.2	147,790	1.8	147,444	2.7	88,209	1.7
OTHER AIRCRAFT EQUIPMENT & SUPPLIES	954,443	20.5	1,003,351	17.9	1,068,729	21.5	810,825	19.0
MISSILE & SPACE SYSTEMS	7,377,973	34.3	7,678,760	37.5	7,100,769	38.6	6,566,490	41.0
SHIPS	7,735,586	7.6	855,540	7.8	1,086,150	11.1	1,503,863	11.2
COMBAT VEHICLES	616,682	16.7	482,376	14.0	722,264	20.9	668,885	20.4
NON-COMBAT VEHICLES	17,023	.9	26,265	1.2	16,012	.9	10,509	.6
WEAPONS	1,080,870	42.2	1,384,243	50.1	1,316,294	52.5	1,554,459	59.3
AMMUNITION	750,119	16.3	549,133	11.6	674,523	16.8	499,702	15.2
ELECTRONICS & COMMUNICATIONS EQUIP	4,206,065	20.0	5,038,438	21.8	4,927,763	23.0	4,557,357	24.1
PETROLEUM	1,913,006	27.9	996,947	17.5	1,087,504	18.5	1,102,863	17.4
OTHER FUELS AND LUBRICANTS	3,655	2.8	2,812	2.2	3,320	3.0	2,368	2.1
CONTRACTORS AND HANDLING EQUIP	1,706	.8	1,199	1.3	1,246	8.0	813	3.0
TEXTILES, CLOTHING, AND EQUIPAGE	15,068	1.5	30,508	3.0	42,202	4.1	51,241	4.7
BUILDING SUPPLIES	3,476	4.0	8,581	6.0	1,516	1.0	3,525	4.5
SUBSISTENCE	182,723	14.5	159,369	15.6	168,800	15.2	170,293	15.6
TRANSPORTATION EQUIP (RAILWAY)	0	.0	47	.0	0	.0	0	.0
PRODUCTION EQUIP	30,707	10.7	32,120	9.9	53,639	17.9	79,478	24.5
CONSTRUCTION	1,084,031	14.4	983,555	12.6	1,007,469	15.2	1,095,791	18.2
CONSTRUCTION EQUIP	1,691	1.1	1,496	.9	962	.4	2,021	.6
MEDICAL & DENTAL SUPPLIES & EQUIP	23,862	4.3	22,919	5.1	28,846	6.5	18,015	4.8
PHOTOGRAPHIC SUPPLIES & EQUIP	30,367	27.2	14,925	13.2	22,844	13.7	19,215	18.9
MATERIALS HANDLING EQUIP	11,075	8.3	7,561	3.7	3,342	2.1	9,503	4.7
ALL OTHER SUPPLIES & EQUIP	665,980	13.8	639,303	11.3	560,766	13.7	621,060	15.9
SERVICES	2,043,889	15.9	1,851,025	16.4	1,745,404	16.7	1,638,050	14.3

Source: [Refs. 59; 60:p. 22]

TABLE IV-11

TOP US DOD PRIME CONTRACTORS
(in thousands)

Top 5 Contractors in the U.S.	Total Amount	Major Areas of Work
FY 1982		
1. General Dynamics Corp.	\$5,866,506	A/C prod.; nuclear submarines; missile sys.; tanks
2. McDonnell Douglas Corp.	5,617,871	A/C and missile system production
3. United Technologies Corp.	4,070,363	A/C engines and helicopters
4. General Electric Co.	3,562,112	Nuclear reactors; A/C engines; space vehicle comp.
5. Hughes Aircraft Co.	<u>3,045,334</u>	Missile system production; radar and missiles; R&D; tanks
Total	\$22,162,186	(21.3% of total awards over \$10,000)
FY 1983		
1. General Dynamics Corp.	\$6,790,675	A/C prod.; nuclear submarines; missile sys.; tanks
2. McDonnell Douglas Corp.	6,096,106	A/C and missile system production
3. Rockwell International Corp.	4,542,843	A/C and missile comp.; R&D; elect. and navigation equip.
4. General Electric Co.	4,425,708	Nuclear reactors; A/C engines; space vehicle comp.
5. Boeing Co.	<u>4,021,366</u>	A/C and missile comp. and prod.; R&D
Total	\$25,876,698	(21.8% of total awards over \$25,000)

TABLE IV-11 (CONTINUED)

FY 1984

1.	McDonnell Douglas Corp.	\$6,508,741	Aircraft fixed wing
2.	General Dynamics Corp.	5,842,458	Aircraft fixed wing
3.	Boeing Co.	4,496,091	Airframe structural components
4.	Rockwell International Corp.	4,181,338	Aircraft fixed wing
5.	General Electric Co.	<u>3,985,592</u>	Gas turbines and jet engines aircraft
	Total	\$25,014,220	(20.2% of total awards over \$25,000)

FY 1985

1.	McDonnell Douglas Corp.	\$7,626,086	Aircraft fixed wing
2.	General Dynamics Corp.	7,364,877	Aircraft fixed wing
3.	Rockwell International Corp.	6,256,322	Aircraft fixed wing
4.	General Electric Co.	5,823,605	Gas turbines and jet engines aircraft
5.	Boeing Co.	<u>4,045,757</u>	Miscellaneous communication equipment
	Total	\$31,116,647	(22.2% of total awards over \$25,000)

TABLE IV-11 (CONTINUED)

FY 1986

1.	General Dynamics Corp.	\$7,957,636	Aircraft fixed wing
2.	McDonnell Douglas Corp.	6,334,052	Aircraft fixed wing
3.	Rockwell International Corp.	5,570,526	Aircraft fixed wing
4.	General Electric Co.	5,559,116	Gas turbines and jet engines aircraft
5.	Raytheon Co.	<u>3,735,833</u>	Guided missile systems, complete
	Total	\$29,157,163	(21.4% of total awards over \$25,000)

Sources: Atlas/State Data Abstract for the
United States:

Fiscal Year 1982
Fiscal Year 1983
Fiscal Year 1984
Fiscal Year 1985
Fiscal Year 1986

TABLE IV-12

CALIFORNIA TOP DOD PRIME CONTRACTORS
(in thousands)

Top 5 Contractors in California	Total Amount	Major Areas of Work
FY 1982		
1. Hughes Aircraft Co.	\$2,461,851	A/C comp.; missile prod.; electronic equip.; R&D
2. Rockwell International Corp.	2,163,867	A/C and missile comp.; R&D; elec. and navigation equipment
3. Lockheed Missiles & Space Co.	1,438,281	Missile maintenance, repair and production; sys. eng.; R&D
4. General Dynamics Corp.	1,415,013	Missile comp., prod., and repair; R&D
5. FMC Corp.	<u>1,118,351</u>	Prod. of combat veh.; R&D
Total	\$8,597,363	(37.9% of total awards over \$10,000)
FY 1983		
1. Rockwell International Corp.	\$3,923,277	Aircraft & missile comp.; R&D, elec. & navigation equip.
2. Hughes Aircraft Co.	2,678,039	Aircraft comp.; missile prod.; electronic equip.; R&D
3. Lockheed Missiles & Space Co.	2,038,288	Missile maintenance, repair & production; sys. eng.; R&D
4. General Dynamics Corp.	1,463,171	Missile comp., prod., & repair; aircraft repair; R&D
5. McDonnell Douglas Corp.	<u>1,204,303</u>	Prod. and comp. aircraft; maint & repair; R&D
Total	\$11,307,078	(42.8% of total awards over \$25,000)

TABLE IV-12 (CONTINUED)

FY 1984

1. Rockwell International Corp.	\$4,181,338	Aircraft fixed wing
2. Hughes Aircraft Co.	2,222,768	Elect countermeasures & quick react equip.
3. Lockheed Missiles & Space Co.	1,773,213	RDTE/missile and space systems
4. General Dynamics Corp.	1,343,586	RDTE/missile and space systems
5. McDonnell Douglas Corp.	<u>1,005,068</u>	Aircraft fixed wing
Total	\$10,525,973	(36.9% of total awards over \$25,000)

FY 1985

1. Rockwell International Corp.	\$5,658,164	Aircraft fixed wing
2. Hughes Aircraft Co.	2,596,943	Radar equip. airborne
3. Lockheed Missiles & Space Co.	1,884,436	RDTE/missile and space systems
4. General Dynamics Corp.	1,829,500	Guided missile comp.
5. McDonnell Douglas Helicopter	<u>1,061,676</u>	Aircraft rotary wing
Total	\$13,030,719	(44.8% of total awards over \$25,000)

TABLE IV-12 (CONTINUED)

FY 1986

1.	Rockwell International Corp.	\$4,866,461	Aircraft fixed wing
2.	Hughes Aircraft Co.	2,497,361	Modification of Eq/ guided missiles
3.	Lockheed Missiles & Space Co.	1,802,461	RDTE/missile and space systems-OP sys dev
4.	McDonnell Douglas Corp.	1,428,828	Aircraft fixed wing
5.	General Dynamics Corp.	<u>1,307,703</u>	Guided missile comp.
	Total	\$11,902,814	(42.9% of total awards over \$25,000)

Sources: Atlas/State Data Abstract for the
United States:

Fiscal Year 1982
Fiscal Year 1983
Fiscal Year 1984
Fiscal Year 1985
Fiscal Year 1986

state was done by a plant, division or subsidiary of the parent company.

In FY 1982 two of the top contractors in the United States were also two of the top five prime contractors in California, General Dynamics Corp. and Hughes Aircraft Co. In FY 1983 and FY 1984, the United States shared three of the top prime contractors in common with California: Rockwell International Corp., General Dynamics Corp. and McDonnell Douglas Corp. Rockwell International Corp. and General Dynamics Corp. were common contractors to the United States and California in FY 1985; but McDonnell Douglas Corp. was the top contractor for the United States, whereas McDonnell Douglas Helicopter was among the top contractors in California for the FY. Finally, in FY 1986, California and the United States again share three of the top five contractors in common: General Dynamics Corp., McDonnell Douglas Corp. and Rockwell International Corp. While not all the dollar amounts awarded to the top shared contractors ended up in California, a good percentage did. Table IV-13 illustrates this point.

E. CALIFORNIA AND MILITARY ACTIVE DUTY AND CIVILIAN COMPENSATION

Thus far it has been established that California was awarded the greatest net value of prime contract awards of all the states from FY 1980 through FY 1986. In addition, and most logically, California was one of the top five

TABLE IV-13

TOP PRIME CONTRACT DOLLARS TO CALIFORNIA
(IN THOUSANDS)

	Shared Contractors	Total Amount U.S.	Total Amount CA	%
FY 1982	General Dynamics Corp. Hughes Air- craft Co. Total	\$5,866,506 <u>3,045,334</u> 8,911,840	\$1,415,013 <u>2,461,851</u> 3,876,864	24 81 44
FY 1983	General Dynamics Corp. McDonnell Douglas Corp. Rockwell Inter- national Corp. Total	6,790,675 6,096,106 <u>4,542,843</u> 17,429,624	1,463,171 1,204,303 <u>3,923,277</u> 6,590,751	22 20 86 38
FY 1984	General Dynamics Corp. McDonnell Douglas Corp. Rockwell Inter- national Corp. Total	5,842,458 6,508,741 <u>4,181,338</u> 16,532,537	1,343,586 1,005,068 <u>4,181,338</u> 6,529,992	23 15 100 40
FY 1985	General Dynamics Corp. Rockwell Inter- national Corp. Total	7,364,877 <u>6,256,322</u> 13,621,199	1,829,500 <u>5,658,164</u> 7,487,664	25 90 55
FY 1986	General Dynamics Corp. McDonnell Douglas Corp. Rockwell Inter- national Corp. Total	7,957,636 6,334,052 <u>5,570,526</u> 19,862,214	1,307,703 1,428,828 <u>4,866,461</u> 7,602,992	16 23 87 38

Sources: Atlas/State Data Abstract for the United
States: Fiscal Year 1982
Fiscal Year 1983
Fiscal Year 1984
Fiscal Year 1985
Fiscal Year 1986

states awarded prime contracts for almost every major procurement program category for the same time frame. And, finally, there were at least two or three of the top five contractors in the United States who were also the top contractors in California for the FY 1980-1986 period. Given that California has led the pack in the preceding sections, it would seem reasonable to assume that California would also have the largest concentration of military active duty and DOD-employed civilians. Table IV-14 presents the leading five states for FY 1980 through FY 1986 in personnel compensation for military active duty and total compensation; total compensation includes military active duty, civilian, reserve and National Guard and retired military pay. In addition to personnel compensation, the number and percentage of total military active duty and DOD-employed civilian personnel are given.

As Table IV-14 clearly presents, California is, again, the unquestioned first place holder; the state has more active duty military personnel and DOD-employed civilians than any other state. The dollars spent in total compensation for the aforementioned personnel, the reserves, the National Guard and retired military are, again, more than for any other state. The question is whether or not there is a link between these personnel figures and the award of prime contracts in California. It is tempting to wonder, given a link, which came first--the contracts and then the

TABLE IV-14

PERSONNEL AND COMPENSATION
(\$ in thousands)

FY	State	Military A/D Pay/% Total Civilian Pay/ % Total	Total Compen- sation/% Total	No. A/D/% Total No. civilian/ % Total Total/% Total
1980	CA	3,319,214/16.4	7,774,018/15.1	194,715/14.3
		2,620,885/14.8		123,119/14.1
	VA	1,912,730/9.4	4,667,694/9.1	317,834/14.2
		2,054,644/11.6		86,432/6.4
	TX	1,877,910/9.3	4,064,191/7.9	95,912/11.0
		1,010,271/5.7		182,344/8.2
	FL	1,179,890/5.8	2,835,298/5.5	138,496/10.2
		561,796/3.2		57,605/6.6
	NC	1,047,507/5.2		196,101/8.8
		249,447/1.4		67,028/4.9
	GA		1,861,952/3.6	28,320/3.2
				95,348/4.3
1981	CA	4,050,882/16.4	8,978,933/15.4	84,875/6.2
		2,846,124/14.9		13,338/1.5
	VA	2,435,104/9.9	5,571,496/9.5	98,213/4.4
		2,271,110/11.9		74,896/5.5
	TX	2,248,453/9.1	4,769,867/8.2	33,369/3.8
		1,128,902/5.9		108,265/4.9
	FL	1,454,077/5.9	3,348,735/5.7	195,989/14.3
		607,413/3.2		323,951/14.3
	NC	1,374,162/5.6		88,305/6.4
		276,291/1.6		98,872/11.1
	GA		2,154,189/3.7	187,177/8.3
				142,053/10.3

TABLE IV-14 (CONTINUED)

1982	CA	4,458,559/17.3	9,924,743/15.5	198,080/14.3
		3,276,465/15.2		128,214/14.3
	VA	2,941,589/11.4	6,472,008/10.1	326,294/14.3
		2,560,415/11.9		90,882/6.5
	TX	2,175,410/8.4	4,981,596/7.8	100,428/11.2
		1,227,223/5.7		191,310/8.4
	FL	1,523,080/5.9	3,652,445/5.7	134,707/9.7
		711,953/3.3		60,509/6.7
	NC	1,452,857/5.6		195,216/8.5
		312,899/1.5		71,524/5.2
	GA		2,424,688/3.8	28,720/3.2
				100,244/4.4
				91,368/6.6
				14,724/1.6
1983	CA	4,896,205/17.7	10,665,918/15.5	106,092/4.6
		3,372,341/14.9		63,962/4.6
	VA	3,130,182/11.3	6,914,898/10.1	35,638/3.9
		2,745,709/12.1		99,600/4.4
	TX	2,283,714/8.2	5,327,429/7.8	204,572/14.5
		1,335,346/5.9		133,359/14.3
	FL	1,654,602/6.0	3,896,181/5.7	337,931/14.4
		716,738/3.2		94,484/6.7
	NC	1,596,174/5.8		104,719/11.3
		338,110/1.5		199,203/8.5
	GA		2,588,916/3.8	133,406/9.5
				62,799/6.7
				196,205/8.4
				70,872/5.0
	CA	4,896,205/17.7	10,665,918/15.5	29,805/3.2
		3,372,341/14.9		100,677/4.3
	VA	3,130,182/11.3	6,914,898/10.1	97,890/6.9
		2,745,709/12.1		15,306/1.6
	TX	2,283,714/8.2	5,327,429/7.8	113,196/4.8
		1,335,346/5.9		62,941/4.5
	FL	1,654,602/6.0	3,896,181/5.7	36,620/3.9
		716,738/3.2		99,561,4.3
	NC	1,596,174/5.8		
		338,110/1.5		
	GA		2,588,916/3.8	

TABLE IV-14 (CONTINUED)

1984	CA	5,087,703/17.6	11,437,639/15.6	203,791/15.0
		3,607,112/14.8		133,803/14.2
	VA	3,355,075/11.6	7,439,892/10.1	337,594/14.7
		2,917,687/11.9		95,825/7.1
	TX	2,304,422/8.0	5,596,359/7.6	103,764/11.0
		1,433,421/5.9		199,589/8.7
	FL	1,712,492/5.9	4,211,061/5.7	131,214/9.7
		805,834/3.3		64,457/6.8
	NC	1,699,357/5.9		195,671/8.5
		368,886/1.5		69,103/5.1
	GA		2,648,853/3.6	31,018/3.3
				100,121/4.4
				100,227/7.4
				15,673/1.7
				115,900/5.0
				59,734/4.4
				37,469/4.0
				97,203/4.2
1985	CA	5,337,007/17.9	11,869,896/15.6	204,822/15.1
		3,573,025/14.4		137,935/14.1
	VA	3,526,742/11.8	7,740,189/10.2	458,324/12.0
		2,877,797/11.6		96,588/7.1
	TX	2,270,865/7.6	5,904,676/7.8	107,247/11.0
		1,687,169/6.8		243,461/6.4
	FL	1,829,537/6.1	4,456,982/5.9	127,176/9.4
		807,677/3.3		66,646/6.8
	NC	1,822,646/6.1		276,248/7.3
		363,926/1.5		73,140/5.4
	GA		1,934,465/2.6	33,029/3.4
				158,954/4.2
				98,702/7.3
				16,312/1.7
				150,848/4.0
				64,390/4.8
				40,356/4.1
				147,524/3.9

TABLE IV-14 (CONTINUED)

1986	CA	5,597,902/17.9	12,486,309/15.3	208,960/15.2
		3,877,041/13.8		135,162/14.1
				479,967/12.2
	VA	3,778,162/12.1	8,396,265/10.3	98,324/7.1
		3,215,244/11.4		106,088/11.1
				248,478/6.3
	TX	2,463,382/7.9	6,187,948/7.6	135,278/9.8
		1,683,768/6.0		63,594/6.6
				286,379/7.3
	FL	1,969,074/6.3	4,770,933/5.8	74,736/5.4
		898,325/3.2		32,022/3.3
				163,461/4.2
	HI	1,127,513/3.6		44,168/3.2
		647,556/2.3		20,753/2.2
				76,994/2.0
	GA		2,999,721/3.7	63,581/4.6
				39,948/4.2
				130,383/3.3

Sources: DOD Selected Manpower Statistics FY 1980
and FY 1981
Atlas State Data Abstract for the U.S.
FY 1982, 1983, 1984, 1985 and 1986
Defense Magazine Sept 1981, Sept 1982,
Sept 1983, Sept 1984, Sept 1985 and
Sept/Oct 1986

personnel to support them, or the personnel and then the contracts because the labor base could support the work. Or, alternatively, these large numbers of DOD connected personnel may exert such a strong constituency pressure on the congressmen in the surrounding districts that votes in Congress look a lot like votes for pork barrel. Whereas Neil Heighberger [Ref. 16] did not find conclusive evidence to support his proposition that representatives who represent districts with a high military presence were strong supporters of ethno-security programs, it might be interesting to update the study and concentrate on California given the very large numbers of DOD personnel in the state.

F. CALIFORNIA AND CONGRESSMEN

Generally, as Representative Les Aspin (Democrat-Wisconsin) espoused [Ref. 22], congressmen from areas with a large number of defense constituents, specifically, defense contractors, try to get on committees in Congress where they can best serve their constituents. The congressmen in California are no exception. Senator Pete Wilson (Republican) has been on the Senate Armed Services Committee since 1983. The House has California representatives serving on the Armed Services Committee and the Appropriations Committee. Table IV-15 shows the representatives from California serving on these two committees as of 1986.

TABLE IV-15

CALIFORNIA REPRESENTATIVES ON THE HOUSE ARMED SERVICES
AND HOUSE APPROPRIATIONS COMMITTEES

Dist.	Rep.	Committee	Years on Committee	Counties Served	No. of Constitu- ents
4th	V. Fazio (D)	Approp.	1980-1986	Sac., Solano, Yolo	525,764
8th	R.V. Dellums (D)	Armed Services	1980-1986	Alameda, Contra Costa	525,646
25th	E.R. Roybal (D)	Approp.	1980-1986	Los Angeles	526,013
28th	J.C. Dixon (D)	Approp.	1980-1986	Los Angeles	525,993
35th	J. Lewis (R)	Approp.	1981-1986	Los Angeles, San Bernardino	525,956
40th	R.E. Badham (R)	Armed Services	1980-1986	Orange	525,935
41th	B. Lowery (R)	Approp.	1985-1986	San Diego	526,043
45th	D.L. Hunter (R)	Armed Services	1981-1986	San Diego, Imperial	525,927

Source: 1986 Congressional Staff Directory,
28th Edition

Of the eight representatives on these committees, it is interesting that four of them serve the two cities where in FY 1986 the greatest dollar value of prime contracts in California were awarded: Los Angeles with prime contract

awards of \$5,474,975,000 and San Diego with \$1,697,612,000. Representatives Roybal and Dixon share the city of Los Angeles in their congressional districts, and Representatives Lowery and Hunter serve the city of San Diego.' Of the other representatives featured in Table IV-15, three representatives have within their districts military bases that rank among the top ten in numbers of personnel stationed in California at individual bases:

Representative Fazio--McCellan AFB (4th)

Representative Lewis--Twentynine Palms MCAGCC (10th)

Representative Badham--El Toro MCAS (8th)

G. SUMMARY

It can be said that California is, by far, awarded more DOD prime contracts than any other state; this was the case before the Reagan Administration began its military buildup and after the plan was initiated. The trend analysis simply does not support the notion that California has benefited more than any other state from the buildup.

The fact that California has been number one in prime contract awards for such a long period of time may be related to the fact that many of the defense contractors awarded contracts choose to do their work in California and that many of the major procurement items are manufactured in the state. The potential influence of a defense-oriented constituency as large as the one in California--composed of the large number of defense contractors, military active

duty personnel, DOD-employed civilians, reserve, National Guard and retired military personnel--is, perhaps, unsurpassed by any other state. And the presence of the large number of congressmen on the House and Senate Armed Services Committees and Appropriations Committees attest to the importance of that constituency.

Given California's enviable position, the next chapter will examine the Commission on State Finance's views of defense expenditures in the state as promulgated in their 1986 report, Impact of Federal Expenditures on California [Ref. 3].

V. THE STATE'S PERSPECTIVE

A. BACKGROUND

The Commission on State Finance for California produced a report in August of 1986 called The Impact of Federal Expenditures on California. The Commission was required by AB 623 (Chapter 1027/85) to: (a) develop and maintain an economic model capable of estimating the impact of certain federal expenditures on California's economy, (b) project federal expenditures coming into California, and (c) estimate the impact of these expenditures on the state's economy and on General Fund revenues [Ref. 3:p. 1]. The specifications of the report, detailed in Section 13895.3 of the Government Code, enacted by AB 623, are as follows:

The commission's report shall address both of the following:

(a) Projections of federal expenditures coming into the state and changes in these expenditures.

(b) The impact of these expenditures on the state's economic growth, employment, tax revenues, and other variables determined to be significant by the commission, for the next year compared to the previous three years.

The report shall also identify significant federal expenditures or potential expenditures coming into the state affecting military bases, installations, and active duty and retired military personnel located within the state as well as the impact of changes in these expenditures. [Ref. 3:p. 5]

Federal expenditures as defined by AB 623 include defense spending for military personnel, procurement, operations and maintenance, and research and development.

This report, August 1986, was the first one of its kind, and it is to become a semi-annual publication in the future. May and November will be the target months for new, updated report availability.

B. DEFENSE SPENDING AND CALIFORNIA'S SHARE

1. Total Spending and California's Share

The Commission on State Finance acknowledges, up front, that its keen interest in producing the report is driven by the fact that California receives an above average share of military and contract spending and that much of this defense spending is discretionary in nature under more immediate control by the President and Congress [Ref. 3:pp. 5-6]. This above average share of military spending is evident in the estimated figures for FY 1986 and the forecasted figures for FY 1987 presented by the state. Of the \$258.4 billion that the United States categorized as defense spending in FY 1986, California saw \$48.5 billion of the amount, or 18.8 percent of the total for the United States [Ref. 3:p. 6]. In FY 1987, the defense spending in California is expected to be about \$50.7 billion, or 18.7 percent of the United States' outlays in defense. Table V-1, which is reproduced from the report, clearly presents

TABLE V-1

FEDERAL EXPENDITURES: HISTORY AND FORECAST
(Billions of Dollars)

UNITED STATES		<i>Actual</i>	<i>Estimate</i>	<i>Forecast</i>
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
Federal Spending-Dept. of Defense ^{a,b}				
Military Personnel	\$47.1	\$50.0	\$52.4	\$56.4
Retired Pay	16.5	17.6	18.8	19.6
Operations	66.8	73.6	76.1	82.9
Procurement:	61.4	70.3	75.5	74.9
Aircraft	23.0	26.5	29.4	28.9
Missiles	9.4	10.7	12.7	12.4
Other	29.0	33.0	33.4	33.6
RDT&E	22.9	27.0	28.6	30.3
Military Construction	6.0	6.9	7.0	6.9
Total, Defense Spending	<u>\$220.8</u>	<u>\$245.4</u>	<u>\$258.4</u>	<u>\$271.0</u>
Federal Spending - Nondefense				
Contracts	\$43.1	\$48.4	\$46.9	\$43.6
Pay	36.7	38.7	39.8	41.0
Total Nondefense Spending	<u>\$79.8</u>	<u>\$87.1</u>	<u>\$86.7</u>	<u>\$84.6</u>
Total, Federal Spending	<u>\$300.6</u>	<u>\$332.5</u>	<u>\$345.1</u>	<u>\$355.6</u>
CALIFORNIA		<i>Actual</i>	<i>Estimate</i>	<i>Forecast</i>
	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
Federal Spending-Dept. of Defense ^{a,b}				
Military Personnel	\$6.2	\$6.5	\$6.8	\$7.3
Retired Pay	2.3	2.5	2.7	2.8
Operations	10.0	11.0	11.4	12.4
Procurement	13.8	16.2	17.6	17.5
Aircraft	5.3	6.1	6.8	6.7
Missiles	2.7	3.1	3.7	3.6
Other	5.7	7.0	7.1	7.2
RDT&E	7.1	8.5	8.9	9.7
Military Construction	0.9	1.1	1.1	1.1
Total, Defense Spending	<u>\$40.4</u>	<u>\$45.7</u>	<u>\$48.5</u>	<u>\$50.7</u>
Federal Spending - Nondefense				
Contracts	\$5.9	\$6.1	\$5.9	\$5.6
Pay	2.6	2.8	3.0	3.1
Total Nondefense Spending	<u>\$8.5</u>	<u>\$8.9</u>	<u>\$8.9</u>	<u>\$8.7</u>
Total, Federal Spending	<u>\$48.9</u>	<u>\$54.6</u>	<u>\$57.4</u>	<u>\$59.4</u>
Commission on State Finance				
August 1986				

Source: [Ref. 3:p. 10]

these figures along with actual expenditures for the United States and California in 1984 and 1985.

Two defense spending categories in Table V-1 merit comment. The procurement outlays in the table include:

- acquisition of new weapons, such as the B-1B bomber, MX missile and Trident missile system
- the major modification of existing systems
- the purchase of spare and repair parts.

The table also shows a decline in total procurement outlays from FY 1986 to FY 1987 which is attributable to lower aircraft and missile procurement for the current year. It is also important to note that current and proposed SDI spending is included in the RDT&E category in Table V-1 for both the United States and California. [Ref. 3:p. 11]

From a more long-range perspective, California has experienced a growth in defense spending in the state which is somewhat greater than the national average:

The rapid buildup in defense spending from 1979 to 1985 is giving way to much slower growth in 1986 and 1987. After growing at an average annual rate of 6.9% during the past four years, real (inflation-adjusted) national defense outlays are expected to increase by only 1.9% in 1986 and 1.2% in 1987, according to the targets set by the congressional spending resolution passed in late June. We expect outlays in California, which grew at an average annual rate of 9.9% (in real terms) between 1983 and 1985, to increase by 4.2% in 1986 and 0.9% in 1987. [Ref. 3:p. 2]

2. Prime Contract Spending and California's Share

The Commission on State Finance concludes that the reason for California's large share of defense spending can

be primarily attributed to the disproportionate amount of prime contract spending in the state [Ref. 3:p. 16].

The trends in prime contract awards in California noted by the Commission, although derived from the defense prime contract information maintained by Data Resources, Inc., a consulting firm which tracks defense spending, are not much different than those previously presented in Chapter IV. The Commission concluded that since the 1960's California has received 15 to 20 percent of all DOD prime contracts awarded in the United States. The largest categories of defense contract spending reported by the Commission were Aircraft, Missiles and Electronics and Communications, with the highest share of procurement spending in the Weapons, Missiles and Space Equipment and Aircraft categories. The large B-1B contract, awarded to Rockwell International, was attributed with helping to increase California's share of DOD prime contracts from 16.4 percent in 1979 to 19.5 percent in 1984. [Ref. 3:p. 20]

In Chapter IV, the basic conclusion concerning trends in the award of DOD prime contracts was simply that California was by far and away the leading state. The Commission draws a similar conclusion, however, they attribute the simplicity of the conclusion to the volatility of defense spending in certain categories:

It is difficult to develop any firm conclusions from these data on underlying trends regarding California's market share of total prime contracting. This is partly because some of the categories have been quite volatile

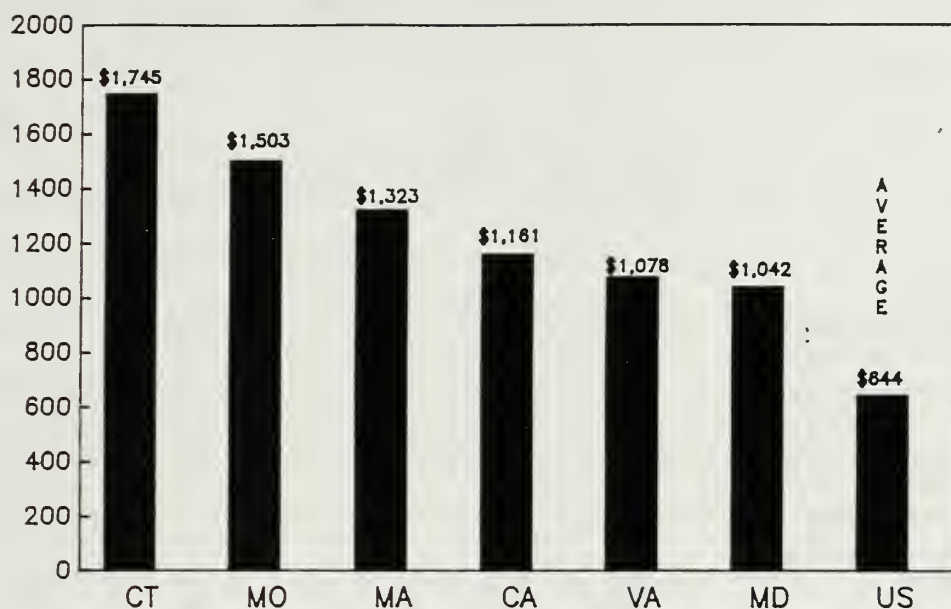
from year to year. For example, . . . aircraft procurement in California fell over 50% between 1976 and 1979. What is clear is that California has maintained a large share of defense spending over the past 25 years. [Ref. 3:p. 21]

In an interesting slant on the prime contract spending information, the Commission on State Finance concludes that while California may have been the largest recipient of DOD prime contract awards, in FY 1985 the state was ranked fourth among 50 states on a per capita basis. The \$30 billion in prime contract awards worked out to be \$1,161 in per capita prime contract spending in California, behind Connecticut (\$1,745), Missouri (\$1,503), and Massachusetts (\$1,323). However, this per capita figure for California was above the \$644 per capita average for all states. [Ref. 3:p. 21] Figure 2, below, presents this information more graphically.

C. DEFENSE SPENDING AND CALIFORNIA'S ECONOMY

1. Defense Spending in 1986

The Commission's report does not minimize the impact of federal defense spending in California; however, the document does point out that although federal defense purchases are large in absolute terms they account for only a part of the economic activity in California. "In 1986, production arising from defense spending (in terms of both prime and subcontracting) will account for about 9.3% of total private output in California. . . ." [Ref. 3:p. 2] The Commission does go on to make it clear that defense



Source: [Ref. 3:p. 21]

Figure 2. Per Capita Defense Prime Contract Spending

spending is vital to some manufacturing industries in the state.

The effects of defense spending on California's key manufacturing industries are considerably more important. For example, defense spending accounts for about 16.3% of total manufacturing output, and a much higher 55.8% of output in the aerospace industry, 38.9% in the communications and electrical equipment industry, and 22.0% of electronic components and semiconductor production in this state. [Ref 3:p. 2]

Table V-2 is reproduced from the Commission's report and compares total California output to defense-related

TABLE V-2

CALIFORNIA OUTPUT RELATED TO DEFENSE SPENDING IN 1986
(Output in billions of 1972 dollars)

Industry	1986 Calif. Employment (Thousands)	Total Calif. Output	Defense-Related Output			Defense Share of Total Output
			Direct	Indirect	Total	
Aerospace	244.5	\$4.5	\$2.1	\$0.4	\$2.5	55.8%
Communications & Electrical Equipment	253.0	12.7	4.2	0.8	5.0	38.9
Electronic Components	158.0	12.2	0.1	2.6	2.7	22.0
Other Durable Goods	501.4	23.8	3.9	1.0	4.9	20.6
Total Manufacturing	2,077.8	121.9	12.6	7.3	19.9	16.3
Transportation Equipment Except Aerospace	59.2	7.5	0.7	0.1	0.8	11.3
Office & Computing Equipment	105.5	19.2	1.1	0.8	1.9	9.7
Utilities	592.1	28.0	0.6	1.8	2.5	8.8
Nonelectrical Equipment Except Computers	110.9	5.3	0.2	0.3	0.4	8.1
Business Services	699.9	24.6	0.7	1.2	2.0	8.1
Mining	46.0	1.8	0.0	0.1	0.1	6.9
Nonbusiness Services	2,109.6	39.6	0.8	1.5	2.3	5.9
Wholesale & Retail Trade	2,780.6	33.9	0.2	1.4	1.6	4.6
Nondurable Goods	645.3	36.6	0.4	1.3	1.7	4.6
Finance, Insurance & Real Estate	759.0	59.9	0.0	2.1	2.1	3.5
Agriculture	333.3	6.6	0.0	0.2	0.2	3.1
Construction	525.8	21.8	0.4	0.2	0.6	2.8
Total - Private Economy¹⁵	9,924.1	\$338.1	\$15.4	\$15.9	\$31.3	9.3%
Federal Government	351.1	\$11.0	\$4.9	\$0.0	\$4.9	44.6%

Note: Output estimates developed from data supplied by Data Resources, Inc.

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Source: [Ref. 3:p. 28]

California output in dollar amounts, and it establishes a defense share percentage of the total output.

As previously stated, the defense spending in California will account for 9.3 percent of total private output in the state in 1986. The industries that appear to have a large percentage of their output dependent upon defense spending include the aerospace, communications and electrical equipment and electronic components industries. About 16.3 percent of the total manufacturing output in California is defense-related. According to the Commission, one half of total defense-related output results from prime contracts. The other half results from subcontracts and secondary purchases, such as raw materials. [Ref. 3:p. 27]

2. Hypothetical Effect on California's Economy of Varying Growth Rates in Federal Defense Spending

The Commission on State Finance devised an econometric model of California, augmented by the DRI input-output based defense modeling system, to estimate the impact of defense contract spending on employment, income and revenues in California. The econometric model was used with varying scenarios, which incorporated different assumptions about the growth of federal defense spending, to predict the impact of defense spending on growth in these economic variables--employment, income and revenue--in California. The results of the model simulation are depicted in Table V-3. The defense spending growth rates were inflation-adjusted and range from minus 9 percent to plus 9 percent in

TABLE V-3

HYPOTHETICAL EFFECT ON CALIFORNIA'S ECONOMY
OF VARYING GROWTH RATES IN FEDERAL SPENDING
(Percent Difference from the Baseline Growth Rates)

Defense Spending							
<i>Difference in Growth in Real Defense Spending Entering California Relative to Baseline</i>							
	-9%	-6%	-3%	0	+3%	+6%	+9%
<i>Effects on Economy</i>							
Employment							
Total Nonagriculture	-1.4	-1.0	-0.5	0.0	0.5	1.0	1.5
Durable Goods Manuf.	-2.4	-1.6	-0.8	0.0	0.8	1.7	2.4
Electronic Components	-2.1	-1.4	-0.7	0.0	0.7	1.4	2.1
Communications & Elect. Equipment	-3.5	-2.4	-1.2	0.0	1.2	2.5	3.7
Aerospace	-5.0	-3.4	-1.7	0.0	1.8	3.6	5.3
Personal Income	-1.2	-0.8	-0.4	0.0	0.4	0.8	1.2
Taxable Sales	-1.2	-0.8	-0.4	0.0	0.4	0.8	1.2
General Fund Revenues	-1.4	-1.0	-0.5	0.0	0.5	1.0	1.4

Source: [Ref. 3:p. 31]

reflect actual growth rates in United States defense spending during the last fifteen years. [Ref. 3:p. 30]

According to the Commission, the table illustrates some important points:

- (1) Increases or decreases in federal spending have relatively modest effects on "aggregate" growth rates in California. For example, a decrease of 9 percent in defense spending lowers overall employment growth by only 1.4 percent.
- (2) These modest changes in aggregate growth rate hide the more pronounced impacts that would occur in key California manufacturing sectors. For example, the same 9 percent decrease in real defense spending

would elicit a 5.0 percent decrease in employment growth in the aerospace industry.

- (3) Revenue growth, represented by the General Funds category, is a little more sensitive to changes in federal spending than income growth. Using the 9 percent decrease in real defense spending example again, the growth in the General Funds category would be depressed by 1.4 percent, while the growth in the personal income would only suffer a 1.2 percent drop. The Commission attributes this fact to the more elastic nature of income tax and the concentration in the manufacturing sector of an increase in defense spending. [Ref. 3:pp. 30-32]

The Commission examined several of the considerations in using an econometric model to estimate impacts on the economy. First, the analysis is focused on statewide average effects in federal spending, and certain programs, firms, and/or industries may be impacted greatly or not at all by changes in defense spending [Ref. 3:p. 34].

Certain programs may be dramatically affected by defense or nondefense cutbacks, while others may not be affected at all. For example, decisions on funding for the Strategic Defense Initiative may be very important to firms that specialize in research and development and in advanced weapons systems.

Finally, even during periods of overall stable or rising funding, individual firms and industries may experience cutbacks as large production contracts are phased out. For example, Rockwell is scheduled to deliver forty-three B-1B bombers to the Air Force in 1987, but only twenty-three in 1988, and zero in 1989. The phaseout of this contract will inevitably lead to layoffs at Rockwell, regardless of overall congressional funding levels for defense during the next two years. [Ref. 3:pp. 34-35]

The second consideration the Commission notes is that the impact estimates are based on alternative growth rates in defense spending which are independent of all other

factors. This, according to the Commission, is an artificiality of the simulation which makes it unrealistic:

However, changes in federal spending would clearly have important feedbacks on the economy, which in many cases might mitigate the impacts shown above. For example, in the case of a reduction of defense spending, the resulting savings in federal expenditures would be available for (a) increased funding of other programs, (b) tax reduction (or at least a reduction in a scheduled tax increase), or (c) reduction in the deficit. [Ref. 3:p. 35]

D. REGIONAL ASPECTS OF DEFENSE SPENDING AND CALIFORNIA

Unlike Chapter IV, which presented some information on the major locations of defense expenditure by city and concentrations of military personnel by base in relation to the appropriate congressional districts, the Commission on State Finance compiled the distribution of defense-related prime contracts among the 54 California counties receiving DOD prime contracts in FY 1985. Table V-4 is the table included in the report and shows the 54 counties ranked on the basis of per capita defense prime contract spending. Santa Clara had the highest per capita spending with over \$3,272 per person; Santa Barbara followed with over \$2,412, and Los Angeles County was ranked third with \$1,929.06 per capita in defense contract dollars. However, Los Angeles County was the leader in total DOD prime contract awards with over \$15.5 billion in awards. In the individual prime contract categories, Los Angeles led the other counties in the Production and Service categories, with the award of 68.4 percent and 22.6 percent, respectively, of the total

TABLE V-4

COUNTY DISTRIBUTION OF 1985 DEFENSE PRIME CONTRACT AWARDS
OVER \$25,000 RANKED BY PER CAPITA AMOUNT
(amounts in millions)

County	RDT&E	Production	Service	Total	Per Capita Amount	Share of CA Total
Santa Clara	\$2,126.018	\$1,824.498	\$601.600	\$4,552.116	\$3,272.78	15.1%
Santa Barbara	336.733	237.749	220.899	795.381	2,412.44	2.6
Los Angeles	2,025.174	12,315.686	1,145.232	15,486.092	1,929.06	51.2
Orange	739.766	1,892.167	313.091	2,945.024	1,395.35	9.7
Solano	0.0	230.970	87.310	318.280	1,174.46	1.1
San Diego	648.246	839.822	732.026	2,220.094	1,055.93	7.3
Alameda	75.490	61.232	917.785	1,054.507	888.38	3.5
Ventura	56.860	226.806	121.163	404.829	681.19	1.3
San Francisco	6.291	255.423	118.309	380.023	523.74	1.3
San Bernardino	131.500	124.640	285.276	541.416	509.47	1.8
Lassen	1.162	0.339	10.691	12.192	499.67	0.0
Sacramento	77.830	248.198	97.785	423.813	479.59	1.4
Kern	20.679	49.866	125.794	196.339	415.88	0.6
San Mateo	73.400	121.588	34.671	229.659	373.98	0.8
Monterey	0.390	7.185	102.186	109.761	337.83	0.4
Kings	0.0	20.643	6.720	27.363	326.92	0.1
Contra Costa	2.145	197.509	22.625	222.279	312.37	0.7
San Benito	0.168	8.331	0.0	8.499	285.20	0.0
Yuba	0.0	1.148	9.497	10.645	198.97	0.0
Yolo	1.359	15.868	4.828	22.055	179.89	0.1
Del Norte	0.0	0.0	2.860	2.860	153.76	0.0
Merced	0.0	0.511	23.511	24.022	152.42	0.1
Sonoma	0.713	42.399	3.384	46.496	140.09	0.2
San Luis Obispo	0.0	20.800	2.145	22.945	124.23	0.1
Glenn	0.0	0.202	2.300	2.502	109.26	0.0
Tulare	0.0	23.823	0.129	23.952	86.56	0.1
Imperial	0.240	0.468	7.909	8.617	82.62	0.0
Riverside	3.226	25.013	30.830	59.069	73.75	0.2
Humboldt	0.124	0.709	6.845	7.678	68.31	0.0
San Joaquin	0.0	6.487	17.352	23.839	58.44	0.1
Stanislaus	0.0	13.193	3.692	16.885	56.13	0.1
Amador	0.0	0.828	0.0	0.828	36.03	0.0
Mono	0.0	0.0	0.289	0.289	31.41	0.0
Marin	0.037	0.881	5.008	5.926	26.20	0.0
Santa Cruz	0.494	4.415	0.0	4.909	23.34	0.0
Nevada	0.0	0.602	0.785	1.387	20.79	0.0
Shasta	0.180	1.600	0.845	2.625	20.25	0.0
Tuolumne	0.0	0.0	0.518	0.518	13.05	0.0
Mariposa	0.076	0.061	0.029	0.166	12.67	0.0
Placer	0.050	1.586	0.044	1.680	12.32	0.0
Mendocino	0.0	0.327	0.527	0.854	11.71	0.0
Siskiyou	0.100	0.243	0.046	0.389	9.15	0.0
Colusa	0.0	0.0	0.125	0.125	8.62	0.0
Fresno	0.215	0.677	3.737	4.629	8.11	0.0
Napa	0.0	0.659	0.163	0.822	7.94	0.0
Tehama	0.0	0.343	0.0	0.343	7.83	0.0
Modoc	0.0	0.065	0.0	0.065	6.77	0.0
Butte	0.0	0.461	0.195	0.656	4.06	0.0
Inyo	0.0	0.074	0.0	0.074	4.02	0.0
El Dorado	0.0	0.352	0.033	0.385	3.77	0.0
Lake	0.0	0.169	0.0	0.169	3.59	0.0
Madera	0.0	0.243	0.0	0.243	3.24	0.0
Calaveras	0.0	0.073	0.0	0.073	2.77	0.0
Sutter	0.045	-0.417	0.057	-0.315	-57.80	0.0
State Total	\$6,328.711	\$18,826.515	\$5,070.846	\$30,226.072	\$1,160.68	100.0%

Source: Data Resources, Inc.

Source: [Ref. 3:p. 38]

state awards. Santa Clara County, however, did have the largest amount of RDT&E prime contract spending in the state with \$2.1 billion in FY 1985. [Ref. 3:pp. 37-39]

E. SUMMARY

In summary, DOD spending accounts for 9.3 percent of the state's total private output on the average. Certain segments of industry receive a higher concentration of defense expenditures; they include the aerospace, communications and electrical equipment and electronics components industries. Among the states, California ranks first if measured by dollar value of prime contracts awarded and fourth on a per capita basis. Research by the state of California on defense spending trends suggests that defense expenditures have been a significant component of California's economy for the last 25 years.

In conclusion, it is obvious that the Commission on State Finance is proud of their work on the report, Impact of Federal Expenditures in California. The Commission freely distributes the report to any one who asks for it. Given that it is possibly the only report of its kind produced by any of the 50 states, it provides a wealth of information about federal defense expenditures in California and their impact on the state's economy. In particular, information, like that presented in Table V-2, which establishes the percentage of defense-related output to total state output, is a valuable indication of the

importance of defense spending in each state. Establishing some indication of the importance of defense spending in each state may also establish the importance of proficiency in defense political gamesmanship--in particular, the importance of the ability to influence increased expenditures in each state having a greater dependency on defense spending.

VI. CONCLUSIONS

A. SUMMARY

1. The Elements of Defense Politics

One of the most recognizable elements of defense politics is the "military-industrial complex." The term, "military-industrial complex," was coined by President Eisenhower in his farewell address to the Nation in 1961 [Ref. 6:p. 797]. Because President Eisenhower warned against its potential misplaced power, the "military-industrial complex" has been carefully studied with a sometimes suspicious and accusatory eye by politicians, journalists, scholars and the like. The generally held notion about the "military-industrial complex" was simply that military men and businessmen had a vested interest in perpetuating the production of the instruments of war; and they would do so to the point of ignoring the alternatives. The alternatives that would be overlooked ranged from something like producing technically simple, standardized weapons, perhaps, as effective, but not as profitable or as state-of-the-art as new systems, to providing less than enthusiastic support for peace initiatives.

In the late 1970s and early 1980s, the "military-industrial complex" has been somewhat overshadowed by, or perhaps better said--grown to include--"congressional-

industrial complex." Again, the premise is the same: businesses and government, particularly a Congress well-connected to defense-related constituencies, work together to serve their own interests by keeping defense spending high. The "congressional-industrial complex" is viewed with no less suspicion than the "military-industrial complex"; its power is presumably kept in check because of the presence of its "watchdogs" in journalism, politics and academics.

The actual measurement of the influence or power of the "military-industrial complex" and/or the "congressional-industrial complex" is difficult, if not impossible, to accomplish. The generally held belief is that the "military-industrial complex" and the "congressional-industrial complex" wield a great deal of influence in the amount and location of defense expenditures for various weapon systems; however, as evidenced in Chapter II, much of the scholarly empirical studies find little support for this viewpoint. And yet, the power and influence with which defense politics are credited has not waned.

The "military-industrial complex" and the "congressional-industrial complex" have been active elements of defense politics during the Reagan Administration; the six case studies presented in Chapter III illustrate this point. However, it would appear that the negative connotations of the terms, "military-industrial complex" and

"congressional-industrial complex," are not always deserved. As the cases show, in some instances, as in the C-5B transport aircraft, the defense political influences produced a better weapon system choice. Additionally, the influence of defense politics may assist in making choices that are neither "good" nor "bad" but simply "made," as in the case of the B-1B bomber.

2. California and the Elements of Defense Politics

In general, the part that defense politics have played in bringing more defense dollars to California during the Reagan Administration is hard to define given the immensity of defense expenditures in the state both before and after the rearmament plan was initiated. To reiterate some of the findings in Chapter IV, recall that California has been awarded more dollars in defense prime contracts than any other state; since the 1960s California has received 15 to 20 percent of all DOD prime contracts awarded in the United States. Since 1980 California has consistently been awarded at least 19 percent of the prime contracts, followed by Texas or New York with less than nine percent each. California was number one in at least eight of the 25 procurement categories reported in the DIOR reports, Department of Defense Prime Contract Awards by Region and State, since 1980; and it has held a place in the top five states in at least 17 of the same 25 procurement categories.

No other state can come close to California in regard to its receipt of DOD prime contract awards. Some of the reasons that California outstrips the other states would appear to lie in a defense political framework. At the end of Chapter II a few questions were put forth that hinted at the potential influence that defense politics could have in the expenditure of defense dollars in California during the Reagan Administration. First, as the former Assistant Secretary of Defense, Charles J. Hitch, suggested, are defense procurement dollars spent in geographic locations where the industries are located? Given that at least two, and most times three, of the top five defense contractors in the United States from FY 1982 to FY 1986 were also among the top five defense contractors working in California, there would appear to be some truth to the suggestion--where the industries are located, the dollars are spent. Secondly, has the impact of direct military presence in the districts of the House representatives been more or less ambiguous during this FY 1980 to FY 1986 time frame? The considerable "presence" of military personnel in California is undeniable. California has more active duty military personnel and DOD-employed civilians than any other state; the compensation to these individuals is also greater than that for any state. Clearly, representatives from California must consider this military presence in their actions. And, finally, are the House and Senate Armed

Services Committees and Appropriations Committees made up of members from districts with a large defense contract constituency-oriented membership? One of the two senators from California, Republican Pete Wilson, has been on the Senate Armed Services Committee since 1983. Of the 45 congressmen from California, eight of them were serving on either the House Armed Services Committee or the Appropriations Committee in 1986. Of the eight representatives, it is interesting that four of them served the two cities where in FY 1986 the greatest dollar values of prime contracts were awarded: Los Angeles and San Diego. Three others of the eight had within their districts military bases that rank among the top ten in numbers of personnel stationed in California at individual bases--McClellan AFB, Twentynine Palms MCAGCC and El Toro MCAS.

B. RECOMMENDATIONS OF AREAS FOR FURTHER RESEARCH

Obviously, not all of the questions posed at the end of Chapter II have been answered in this thesis. Three of the questions were linked in the preceding section to trends in defense expenditures during the Reagan Administration, but the rest remain unanswered and are prime candidates for further research in this area. They, again, are:

1. Is the prosperity of the nation, in particular California, dependent on the might of the "military-industrial complex" as Cook suggests?
2. Do the shifts in strategic plans and the ever-changing international situation dictate the product mix of defense procurement?

3. Does the "military-industrial complex" hinder arms control, as denied by Charles Wolf, Jr.?
4. Have the "follow-on" and the "bail-out" imperatives, as developed by Kurth, been operating during the Reagan Administration?
5. Have the votes of the senior members of Congress correlated to concentrations of defense spending during the Reagan Administration as Cobb found in earlier years?
6. Has there been an institutional push towards partisan voting on defense procurement issues during the Reagan Administration, as Davidson and Oleszek suggest?

In addition to these questions, it would be interesting to expand this thesis from the context of a case study on California to a study of all states, as was the original intent of this thesis. To incorporate all the states in a study, the DRI U.S. Macro Model, that was used by the State of California's Commission on State Finance, would have to be used with each state's own econometric model to provide output estimates for analysis.

Alternatively, the Office of the Under Secretary of Defense for Research and Engineering, Office of Industrial Base Assessment, has developed the DEIMS (Defense Economic Impact Modeling System) model which is used by the Office of the Secretary of Defense's Office of Program Analysis and Evaluation to estimate defense spending that may occur in each of the 50 states during future calendar years. The product of this model is the report published yearly by DIOR, previously titled Estimated Defense Expenditures for States. The most recent report has been renamed Projected

Defense Purchases Detailed by Industry and State Calendar Years 1986-1991. This report estimates defense spending in each state on the basis of the President's budget submission. The potential dollar expenditures are shredded out, program by program, and placed into the industries where the production, research and development efforts, or the like, will take place. Then, based on the geographic distribution of the major components of defense spending in the recent past, the defense spending estimates for each state are developed in total and, in particular, defense spending estimates are made for the largest industry sectors in the state. [Ref. 61:p. 1] This report, if coupled with information about the share of a state's industrial base taken up by defense work, points to the importance of influencing defense expenditures in the state.

C. THE CONCLUSION

Has California benefited more than any other state from the Reagan Administration's military buildup? Folklore says it has, but the facts seem to counter this belief. While during FY 1981 through FY 1984 California did receive the largest dollar value increases in contract awards of any state, the percentage change represented by these dollar values was not among the largest percentage changes in awards to the fifty states. It is essential to consider the changes in the context of the immensity of the awards given to California for an adequate comparison.

The fact that the State of California is interested enough in federal expenditures to produce a report, Impact of Federal Expenditures on California, indicates the importance that these expenditures have in relation to the state's economy. However, this interest is not a product of the Reagan Administration's military buildup. As the report states, since the 1960s, the state has received 15 to 20 percent of all DOD prime contracts; the 19 percent average figure for FY 1980-1986 is, therefore, right in line. [Ref. 3:p. 20] Additionally, the state is quick to point out that defense spending in California accounted for only 9.3 percent of total private output in the state in 1986 and that only 16.3 percent of manufacturing output was defense-related. While changes in defense expenditures could affect some manufacturing industries dependent upon defense spending more than others, relatively modest effects would be evidenced in "aggregate" growth rates, such as employment and revenue growth. [Ref. 3:pp. 30-32]

The fact of the matter is that California's huge infrastructure of defense industries and non-defense industries is so large that, all other considerations of the elements of defense politics aside, the state is a natural candidate for and recipient of defense expenditures in times of both austere and abundant defense funding.

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